

137/185

1
1/1 31/11
CGG GTA AGG CGG CGT CCC AGT GGT ATC CGT CGG CGG GAC CGC CGG AAA CAT CAG CGG CGG
pro val thr pro arg pro ser ala ile arg pro pro asp arg pro lys his gln arg arg
61/21 91/31
CGG CCC CGG TCG GCC GGG GCG GCG CTC GAC CGG CTC CAC CTG GCC ATC AGC GAC CAG GTT
ala pro arg ser ala ala ala gly leu asp pro leu his leu ala ile ser asp gln val
121/41 151/51
ATC GAG CTG GAA CGG GAC GGT GTT GGG ATG CAC GGC CAA CTT GCC GGC GAT CGC GGC GAT
ile glu val glu ala asp gly val gly met his ala gln leu ala gly asp arg gly asp
181/61 211/71
GCT CAT CGG AAC CGG CGA CGG ACA CAA TGG CGG CAG CAC CGC AGC AGC GCG CCC CAC CGG
ala his arg asn pro arg arg thr gln cys pro glu his arg thr thr ala pro his arg
241/81 271/91
GTC TTG CAG TGA CCT GAT GAT GAC ACT CAC GCC CAT AAG GCT GGT CGG CTG CGC CTG AGC
leu leu gln opa pro asp asp asp thr his pro his lys ala arg arg leu arg leu ser
301/101 331/111
AAT GCA GTA AGT TTA CAC AAA CGG ACT TGT AAA AAC CTG CGG AGG TGG GGT CTA TGG CCA
asn ala val ser leu his lys arg thr cys lys asn leu arg arg trp gly leu trp pro
361/121 391/131
ACA AAC CTG GCA ATG CCG GCG AGC CTC TGC CTT TGT CCG ATC
thr asn val ala met pro gly ser leu cys pro cys arg ile

SEQ ID N° 42B

FIGURE 42B

1/1 31/11
CGG TAA CGC CGC CTC CCA GTG CTA TCC GTC CGC CGA ACC GCG CCA AAC ATC AGC CGC GGG
arg och arg arg val pro val leu ser val arg arg thr ala arg asn ile ser gly gly
61/21 91/31
CGC CTC GGT CGG CGG CGG GGC TCG ACC CGC TCC ACC TGG CCA TGA GCG ACC AGG TTA
arg pro gly arg pro arg pro gly ser thr arg ser thr trp pro ser ala thr arg leu
121/41 151/51
TGG AGG TGG AAG CGG AGC GTG TTG GGA TGC ACB CGC AAC TTG CGG GCG ATC GCG CGC ATG
ser arg asp lys arg thr val leu gly cys thr pro asn leu pro ala ala ala ala met
181/61 211/71
CTC ATC GGA ACC CGC GAC GCA CAC AAT GCG CGC AGC ACC GCA CGA CGG CGC CGC ACC GGC
leu ile gly thr arg asp ala his asn ala arg ser thr ala arg arg pro thr gly
241/81 271/91
TCT TGC AGT GAC CTG ATG ATG ACA CTC ACC CGC ATA AGG CTC GTC GGC TGC GCG TGA GCA
ser cys ser asp leu met met thr leu thr pro ile arg leu val gly cys ala opa ala
301/101 331/111
ATG CAG TAA GTT TAG ACA AAC GGA CTT GTA AAA ACC TGC GGA GGT CGG CTC TAT GGC CAA
met gln och val tyr thr asn gly leu val lys thr cys gly gly gly val tyr gly gln
361/121 391/131
GAA AGG TGG CAA TGC CGG GCA GGC TGT GCG CTT GTC GGA TC
gln thr trp gln cys arg ala ala ser ala leu val gly

SEQ ID N° 42C

FIGURE 42C

FEUILLE DE REMPLACEMENT (REGLE 26)

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Séquence codante Rv2623 prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq42A:

```

1/1                               31/11
atg gcc aac aea cgt gcc aat gcc ggg cag cct ctg ccc ttg tgg gat cga gac gac gcc
Met ala asn lys arg gly asn ala gly gln pro leu pro leu ser asp arg asp asp asp
61/21                               91/31
cac atg cag ggg cac tgg ctg ctg gcc cgg ctg gcc aag cgg gtg ctg cgt ccc gcc gcc
his met gln gly his trp leu leu ala arg leu gly lys arg val leu arg pro gly gly
121/41                               151/51
gtc gaa ctc acc cgg aca ctg ctg gcc cgc gcc gag gtg acc gac gcc gac gtg ctc gag
val glu leu thr arg thr leu leu ala arg ala glu val thr asp ala asp val leu glu
181/61                               211/71
ctg gca cgg gcc ctg gcc cgc acc gca gcc gaa atc ttg gcc cgt aac cgg cgg tgg tac
leu ala pro gly leu gly arg thr ala ala glu ile leu ala arg asn pro arg ser tyr
241/81                               271/91
ggc ggg gcc gag agc gat ccc aac gcc gcc aac ctg gtc cga cac ggt ctc gcc gcc cgc
val gly ala glu ser asp pro asn ala ala asn leu val arg his val leu ala gly arg
301/101                               331/111
ggc gac gtc cgg gtc acc gac gcc gcc gat aac gga tta tcc gac gcc acc gcc gat gtc
gty asp val arg val thr asp ala ala asp thr gly leu ser asp ala ser ala asp val
361/121                               391/131
gtc atc gcc gag gcc atg ctg acc atg caa ggc aac gcc ggt aaa cac aag atc gtc gcc
val ile gly glu ala met leu thr met gln gly asn ala ala lys his thr ile val ala
421/141                               451/151
gag gcc gcc cgg gtg ctg agg cgg ggt gcc cgc tac gcc att cac gaa cta gag ctg gtg
glu ala ala arg val leu arg pro gly gly arg tyr ala ile his glu leu ala leu val
481/161                               511/171
ccg gac gac gtc gca gag cag gcc cgc acc gac ctg cgg cag tgg ctg gcc cgc gcc ctc
pro asp asp val ala glu gln val arg thr asp leu arg gln ser leu ala arg ala leu
541/191                               571/191
aag gtc aat gcc cgt cgg ctg acc gtt gcc gaa tgg tgg cac ctc tta gcc gcc gat gaa
lys val asn ala arg pro leu thr val ala glu cyp ser his leu leu ala gly his gly
601/201                               631/211
ctg gtc gtc gaa cac gtt gtc acc gct tcc atg gcc ttg tta caa cgg cga cgg gtg atc
leu val val glu his val val thr ala ser met ala leu leu gln pro arg arg val ile
661/231                               691/231
gct gac gaa gcc ctc ctg ggt gcc ctg cgg tcc gcc gga aac ctg ccc acc cat cgt gcc
ala asp glu gly leu leu gly ala leu arg phe ala gly asn leu leu ile his arg ala
721/241                               751/251
gcc cgt cgg cga gtc ctg ttg atg cgc aac aca ttc cgc agg cat cgt gaa cgc ttg aca
ala arg arg arg val leu leu met arg his thr phe arg arg his arg glu arg leu thr
781/261                               811/271
gcc gtc gcc atc gtc gcc cac aaa cgg cac gtc gat tgg tga
ala val ala ile val ala his lys pro his val asp ser opa

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SEQ ID N° 42D

FIGURE 42D

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ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv2622

1/1 31/11
 taa aaa cct ggc gag gtg ggg tct atg gcc aac aaa cgt ggc aat gcc ggg gag cct ctg
 oca lys pro ala glu val gly ser met ala aen lys arg gly aen ala gly gln pro leu
 61/21 91/31
 ccc ctg tog gat cga gac gac gac cac atg cag ggg cac tgg ctg ctg gcc ggg ctg ggc
 pro leu ser asp arg asp asp asp his met gln gly his trp leu leu ala arg leu gly
 121/41 151/51
 aag cgg gtg ctg cgt ggc ggc ggc gtc gaa ctc acc cgg aca ctg ctg gcc cgt gcc gag
 lys arg val leu arg pro gly gly val glu leu thr arg thr leu leu ala arg ala glu
 191/51 211/71
 gtg acc gac gcc gac gtg ctg gag ctg gca ccc ggc ctg ggc cgc acc gca gcc gaa atc
 val thr asp ala asp val leu glu leu ala pro gly leu gly arg thr ala ala glu ile
 241/91 271/91
 arg gcc cgc aac cgc cgt ctg tac gtg ggg gag gag aga gat ccc aac ggc gcc aac ctg
 leu ala arg aen pro arg ser tyr val gly ala glu ser asp pro aen ala ala aen leu
 301/101 331/111
 gtc cga cac gtt ctc gcc gcc cgc ggc gac gtc cgg gtc acc gac ggc gcc gat acc ggc
 val arg his val leu ala gly arg gly asp val arg val thr asp ala ala asp thr gly
 361/121 391/131
 tta tcc gac gcc agc gcc gat gtc gtc atc ggc gag ggc atg ctg acc atg cca gcc aac
 leu ser asp ala ser ala asp val val ile gly glu ala met leu thr met gln gly aen
 421/141 451/151
 ggc gct aaa cac acg atc gtc gcc gag gag ggc cgg gtg ctg agg cgc ggt gcc cgc tac
 ala ala lys his thr ile val ala glu ala ala arg val leu arg pro gly gly arg tyr
 481/161 511/171
 gcc att cac gaa cta cgg ctg gtg cgc gac gac gtc gaa gag dag gcc cgc acc gac ctg
 ala ile his glu leu ala leu val pro asp asp val ala glu gln val arg thr asp leu
 541/181 571/191
 cgg cag tog ctg gcc cgt gcc ctc aag gtc aat gcc cgt cgt cgt acc gtc gcc gaa tgg
 arg gln ser leu ala arg ala leu lys val aen ala arg pro leu thr val ala glu trp
 601/201 631/211
 tog cac ctc tta gag gcc cat gga ctg gtc gtc gaa cag ggt gtc acc gct tcc atg gcc
 ser his leu leu ala gly his gly leu val val glu his val val thr ala ser met ala
 661/221 691/231
 ttg tta caa cgc cga cgg gtg atc gct gac gaa gcc ctc ctg ggt gcc ctg cgg ttc gcc
 leu leu gln pro arg arg val ile ala asp glu gly leu leu gly ala leu arg phe ala
 721/241 751/251
 ggc aac ctg ctc atc cat cgt gcc gcc cgt cgg cga gtc ctg ttg atg gcc cac aca ttc
 gly aen leu leu ile his arg ala ala arg arg arg val leu leu met arg his thr phe
 781/261 811/271
 cgc agc cat cgt gaa cgc ttg aca gcc gtc gcc att gtc gcc cac aac cgc cat gtc gat
 arg arg his arg glu arg leu thr ala val ala ile val ala his lys pro his val asp
 841/281
 tog taa
 aac opa

SEQ ID N° 42F

FIGURE 42F

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1/1                               31/11
atc ggc cgt gac atc gat gac cag ggt cgg ctg tgt ctg gac gtc gcc ggt cga acg gta
ala ala arg asp ile asp asp gln gly arg leu cys leu asp val gly gly arg thr val
61/21                               91/31
gtt gtt tca ggc ggc gac gtg gtg cat ttg cgt taa acg ggc cgg agc tgg cgt ccc caa
val val ser ala gly asp val val his leu arg och leu ala arg ser trp arg pro gln
121/41                               151/51
aag att aag gtc ggc ggc atg agc tat ccg gag aat gtc ctg gcc gct gcc gag cag gtc
lys ile lys val ala gly met ser tyr pro glu asn val leu ala ala gly glu gln val
181/61                               211/71
gtt ctg cac cgc cat cgg cac tgg aat cgc tta atc tgg ccc gtc gtg gtg ctg gtc ttg
val leu his arg his pro his trp asn arg leu ile trp pro val val val leu val leu
241/81                               271/91
ctg acc ggg ttg ggc ggc ttc ggg tcc gga ttc gtc aac tgg aca cct tgg cag cag atc
leu thr gly leu ala ala phe gly ser gly phe val asp ser thr pro trp gln gln ile

```

SEQ ID N° 43A

FIGURE 43A

```

1/1                               31/11
tcg cgc gtg aca tgg atg acc agc gtc ggc tgt gtc tgg acg tgg ggc gtc gaa ggc tag
ser arg val thr ser met thr arg val gly cys val trp thr ser ala val glu arg AMS
61/21                               91/31
ttg ttt cag cgg ggc acg tgg tga att tgg gtt aac tgg cgc gaa gct ggc gtc vcc aaa
leu phe gln arg ala thr trp cys ile cys val asn ser arg gly ala gly val pro lys
121/41                               151/51
aga tta agg tgg cgg gca tga gct atc cgg aga atg ttc tgg ccy ctg gcy agc agc tgg
arg leu arg ser arg ala OFA ala ile arg arg met ser trp pro leu ala ser arg ser
181/61                               211/71
ttc tgc acc gcc atc cgc acc gga atc gct taa tct ggc cgg tgg tgg tgc tgg tct tgc
phe cys thr ala ile arg thr gly ile ala och ser gly pro ser trp cys trp ser cys
241/81                               271/91
tga cag ggt tgg cgg cgt tgg ggt cgg gat tgg tca act cga aac ctt gcc agc aga tc
OFA pro gly trp arg arg ser gly pro asp ser ser thr arg his leu gly ser arg

```

SEQ ID N° 43B

FIGURE 43B

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```

1/1          31/11
cgc ggc tga cat cga tga cca ggc tgc gct gtg tct gga cgt cgg cgg tgg aac ggt agt
arg ala oPa his arg oPa pro gly ser ala val ser gly arg arg ser asn gly ser
61/21
tgc ttc agc ggc cga cgt ggt gca ttr tgc ttc aat cgc ggc gag ctg ggc tcc cca aaa
cys phe ser gly arg arg gly ala phe ala leu thr arg ala glu leu ala ser pro lys
121/41
gat taa ggc cgc ggc cat gag cta tcc gga gaa tgc cct ggc cgc tgg cga gaa ggt cgt
asp oCh gly arg gly his glu leu ser gly gln cys pro gly arg trp arg ala gly arg
181/61
tgc gca ccg cca tcc gaa ctg gaa tgc ttr aat cgc gac cgt cgc ggt gct gct ctt gct
ser ala pro pro ser ala leu glu ser leu asn leu ala arg arg gly ala gly leu ala
241/81
gac cgc gtt ggc ggc ggt cgt cgc gtc cgc att cgc cca ttc gac acc ttg gca gca gat c
asp arg val gly gly val arg val arg ile arg gln leu asp thr leu ala ala asp
271/91

```

SEQ ID N° 43C

FIGURE 43C

Séquence codante Rv3278c prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq13A:

```

1/1          31/11
atg agc tct cgc gag aat gtc ctg gcc gct gcc gag cag gtc gtc cgc cac cgc cat cgc
Met ser tyr pro glu asn val leu ala ala gly glu gln val val leu his arg his pro
61/21
cac tgg aat cgc tta atc tgg ccc gtc gtc gtc cgc gtc tgc ctg acc ggc ttg gca gcy
his trp asn arg leu ile trp pro val val val leu val leu thr gly leu ala ala
121/41
ttc ggc tcc gga ttc gtc aac tgc aca cct tgg cag cag atc gct aag aac gtc att cac
phe gly ser gly phe val asn asx thr pro trp gln gln ile ala lys asn val ile his
181/61
cgc gtc atc tgg ggc atc tgg tgg gtc atc gtc ggc tgg ctc acg ctg tgg cca ttc cgc
ala val ile trp gly ile trp leu val ile val gly trp leu thr leu trp pro phe leu
241/81
agc tgg ctg acc aca cat ttc gtc gtc acc aac cgc cgc gtc atg ttc cgc cat ggt ggc
ser trp leu thr thr his phe val val thr asn arg arg val met phe arg his gly val
301/101
cgc acc cgc agc ggc atc gac ata cgc cta gca cgc atc aac agc ggc gag ttr cgc gac
leu thr arg ser gly ile asp ile pro leu ala arg ile asn ser val glu phe arg asp
361/121
cgc atc ttc gag cgc aat ttt cgc acc cgc cgc ttc atc acc gag ttc cgc tca cca gat
arg ile phe glu arg ile phe arg thr gly thr leu ile ile glu ser ala ser gln asp
421/141
cgc ctc gag ttc tac aac att cgc cgc ctg cgc gac gtc cat ggc ttg ctg taa cac gag
pro leu glu phe tyr asn ile pro arg leu arg gln val his ala leu leu tyr his glu
481/161
ggt ttc gac aac ctg ggc tcc gac gag tgc ccc agc tga
val phe asp thr leu gly ser asp glu ser pro ser oPa
511/171

```

SEQ ID N° 43D

FIGURE 43D

FEUILLE DE REMPLACEMENT (REGLE 26)

142/185

ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Kv3278c

```

1/1                               31/11
taa ctc gcc cgg agc tgg cgt ccu caa aag att aag gtc gcc gcc atg agc tat cgg gag
OCH leu ala arg ser trp arg pro gln lys ile lys val ala gly met ser tyr pro glu
61/21                               91/31
aat gtc ctg gcc gct gga gag cag gtc gth ctg cac cgc cat cgg cac tgg aat cgc tta
asn val leu ala ala gly glu gln val val leu his arg his pro his trp asn arg leu
121/41                               151/51
atc tgg ccc gtc gtc gtc arg gtc ttc arg acc ggg ttg gcc gcc ttc ggg tcc gga ttc
ile trp pro val val val leu val leu leu thr gly leu ala ala phe gly ser gly phe
181/61                               211/71
gac aac tgg aca cct tgg cag cag atc gct aag aac gag aht cac gcc gtc atc tgg ggg
val asn ser thr pro trp glu gln ile ala lys asn val ile his ala val ile trp gly
241/81                               271/91
atc tgg ttg gtc atc gtc gcc tgg cgc acg ctg tgg cca ttc ctg agc tgg ctg acc aca
ile trp leu val ile val gly trp leu thr leu trp pro phe leu ser trp leu thr thr
301/101                               331/111
cat ttc gtc gtc aac aac cgg cgg ggc atg ttc cgg cat ggt gtc ctg acc cgc ago ggg
his phe val val thr asn arg arg val met phe arg his gly val leu thr arg ser gly
361/121                               391/131
atc gac ata ccg cta gaa cgg atc aac agc gtc gag ttc cgg gac cgg atc ttc gag cgg
ile asp ile pro leu ala arg ile asn ser val glu phe arg asp arg ile phe glu arg
421/141                               451/151
att ttc cgc acc ggg aay ttg att atc gag tcc gcc taa caa gat ccg ctc gag ttc tac
ile phe arg thr gly thr leu ile ile glu ser ala ser gln asp pro leu glu phe tyr
481/161                               511/171
aac att ccg cgc ctg cgg gag gtc cat ggc ttg ctg tat cac gag ggt ttc gac acc ctg
asn ile pro arg leu arg glu val his ala leu leu tyr his glu val phe asp thr leu
541/181
ggc tcc gac gag tgg ccc agc tga
gly ser asp glu ser pro ser OPA

```

SEQ ID N° 43F

FIGURE 43F

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1/1 31/11
 gcc aag atg gat gtc tac caa cgc acc gcc gcc gcc tgg cag ccg ctc aag acc ggt atc
 ala lys met asp val tyr gln arg thr ala ala gly trp gln pro leu lys thr gly ile
 61/21 91/31
 acc acc cat atc ggt tgg ggg gcc atg ggg ccg gaa gcc aag acc gga tat ccg gcc act
 thr thr his ile gly ser ala gly met ala pro glu ala lys ser gly tyr pro ala thr
 121/41 151/51
 ccg atg ggg gtt tac agc dtg gac tcc gct ttt gcc acc gcc ccg aat ccc ggt gcc ggg
 pro met gly val tyr ser leu asp ser ala phe gly thr ala pro asn pro gly gly gly
 181/61 211/71
 ttg ccg tat acc caa gtc gga ccc aat cac tgg cgg agt gcc gac gac aat acc acc acc
 leu pro tyr thr gln val gly pro asn his trp trp ser gly asp asp asn ser pro thr
 241/81 271/91
 ttt aac tcc atg ccg gtc tgt cag aag tcc cag tgc ccg ttc acc acc gcc gac acc gag
 phe asn ser met gln val cys gln lys ser gln cys pro phe ser thr ala asp ser glu
 301/101 331/111
 aac ccg caa atc ccg cag tac aag cat tag gtc gkg atg gcc gtc aac aag gcc aag gtc
 asn leu gln ile pro gln tyr lys his ser val val met gly val asn lys ala lys val
 361/121 391/131
 cca gcc aaa gcc tcc gcc ttc ttc ttt ccc acc acc gac gcc ggg ccc acc gcc ggt tgt
 pro gly lys gly ser ala phe phe phe his thr thr asp gly gly pro thr ala gly cys
 421/141
 gtg gcc acc
 val ala ile

SEQ ID N° 44A

FIGURE 44A

1/1 31/11
 cca aga tgg atg tct acc aac gca ccg ccg gcc gcc agc cgc taa aga ccg gta tca
 pro arg trp met ser thr asn ala pro pro pro ala gly ser arg ser arg pro val ser
 61/21 91/31
 cca ccc ata tgg gtt cgg cgg gca tgg cgc ccg aag gcc gat atc ccg cca ctc
 pro pro ile ser val arg arg ala trp arg arg lys pro arg ala asp ile arg pro leu
 121/41 151/51
 cga tgg ggg ttt acc gcc tgg act ccg dtt tgg gca ccg ccg cga atc ccg tgg gcc ggt
 arg trp gly phe thr ala trp thr pro leu leu ala pro arg arg ile pro val ala gly
 181/61 211/71
 tgc tgt ata ccc aag tgg gac cca atc acc ggt gga gtg gcc aag cca ata gcc cca cct
 cys arg ile pro lys ser asp pro ile thr gly gly val ala thr thr ile ala pro pro
 241/81 271/91
 cca act cca tgc agg tct gtc aga agt ccc agt gcc cgc tca gca cgg ccg cca gcc aga
 leu thr pro cys arg ser val arg ser pro ser ala arg ser ala arg pro thr ala arg
 301/101 331/111
 acc tgc aas tcc cgc agt aca agc att ccg tgg tga tgg gcc tca ada agy cca agy tcc
 thr cys lys ser arg ser thr ser ile arg ser gpa trp ala ser thr arg pro arg ser
 361/121 391/131
 ccg gca aag ggt ccg cgt tct tct tcc cca cca ccg acc gcc gcc cca ccg cgt gtt gtc
 gln ala lys ala pro arg ser ser phe thr pro pro thr ala gly pro pro arg val val
 421/141
 tgg aga tc
 trp arg

SEQ ID N° 44B

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 44B

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```

1/1                               31/31
caa gat gga tgt cta cca aag aac cgc cgc cgg ctg gca gcc gat caa gac cgg tat cac
gin asp gly cys leu pro thr his arg arg arg leu ala ala ala gln asp arg tyr his
61/21                               91/31
aac cca tat cgg ttc gcc ggg aat gcc gcc gga agc caa gag cgg ata tcc gcc aac tcc
his pro tyr arg phe gly gly his gly ala gly ser gln glu arg ile ser gly his ser
121/41                               131/51
gat ggg ggt tta cag cct gga ctg cgc ttt tgg cac cgc gcc gaa tcc cgg tag cgg ggt
asp gly gly leu gln pro gly leu arg phe tip his arg ala glu ser arg trp arg val
181/61                               211/71
gcc gta tac cca agt cgg acc caa toa ctg gtg gag tgg aga cga caa tag ccc aac ctt
ala val tyr pro ser arg thr gln ser leu val glu trp arg arg gln amh pro his leu
241/81                               271/91
taa ctg cat gca ggt ctg tca gaa gtc cca gtg ccc gtt cag cac gcc cga cag cga gaa
och leu his ala gly leu ser glu val pro val pro val gln his gly arg gln arg glu
301/101                               331/111
cct gaa sat ccc gca gta caa gca ttc ggt cgt gat ggg cgt caa caa gcc caa ggt cct
pro ala asn pro ala val gln ala phe gly arg asp gly arg gln gln gly gln gly pro
361/121                               381/131
agg caa agg ctg cgc gtc ctt ctt tca cac aac cga cgg cgg gca cac cgc ggg ttg tgt
arg gln arg leu arg val leu leu ser his his arg arg arg ala his arg gly leu cys
421/141
ggc gat c
gly asp

```

SEQ ID N° 44C

FIGURE 44C

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Séquence codante Rv0389 prédite par Cole et al., 1995 (Nature 393:537-541) et contenant Séq4A:

```

1/1
atg agc cga ctc cta gct ttg atg tgc gct gag gta tgc acg ggc tgc ggt ggt gtc gtt
Met ser arg leu leu ala leu leu cys ala ala val cys thr gly cys val ala val val
61/21
ctc ggc cca gtg agc atg gcc gtc gtc aac ccg tgg ttc gag aac tgc gtc gcc aat gcc
leu ala pro val ser leu ala val val asn pro trp phe ala asn ser val gly asn ala
121/41
act cag gtg gtt tgc gtg gtg ggc aac gcc ggt tgc acg gcc aag atg gat gtc tac caa
thr gln val val ser val val gly thr gly gly aac thr ala lys met asp val tyr gln
181/61
cgc acc gcc gcc gcc tgg cag ccg ctc aag acc ggt acc acc acc taa atc ggt tgc ggc
arg thr ala ala gly trp gln pro leu lys thr gly ile thr thr his ile gly ser ala
241/81
ggc atg ggc ccg caa gcc aag agc ggc tat ccg gcc act ccg atg ggc ggt tac acc atg
gly met ala pro glu ala lys ser gly tyr pro ala thr pro met gly val tyr ser leu
301/101
gac tcc gct ttt gcc aac gag ccg aat acc ggt ggt ggc tgc cag tat acc caa gcc gcc
asp ser ala phe gly thr ala pro asn pro gly gly gly leu pro tyr thr gln val gly
361/121
ccc aat caa tgg tgg agt gcc gac gac aat agc ccc acc ttc aac tcc acg cag gtc tgt
pro asn his trp trp ser gly asp asp asn ser pro thr phe asn ser met gln val cys
421/141
cag aag tcc cag tgc ccg ttc agc acg gcc gac agc gag acc ccg caa atc ccg cag tac
gln lys ser gln cys pro phe ser thr ala asp acc glu asn leu glc ile pro gln tyr
481/161
aag cat tgc gtc gtg atg gcc gln aac aag gcc aag gcc acc gcc caa gcc tcc gcc ttc
lys his ser val val met gly val asn lys ala lys val pro gly lys gly ser ala phe
541/181
ttc ttt caa acc aac gac gcc ggc gcc acc gcc ggt tgc gtc gcc atc gcc gat gcc acc
phe phe his thr thr asp gly gly pro thr ala gly cys val ala ile asp asp ala thr
601/201
ctg gtg cag atc atc agt tgg ctg ccg cct gcc ggc ggc atc gcc atc gcc aag taa
leu val gln ile ile arg trp leu arg pro gly ala val ile ala ile ala lys OCH

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SEQ ID N° 44D

FIGURE 44D

146/185

ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant RV0309

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1/1                               31/11
tga gag atg agc cga ctc cta gct ttg atg tgc gct gcg gta tgc acg gcc tgc gtt gct
CPA ala met ser arg leu leu ala leu leu cys ala ala val cys thr gly cys val ala
61/21                               91/31
gtg gtt ctc gcg cca gtg agc atg gcc gtc gtc aac cag tgg ttc gcg aac tgc gtc gcc
val val leu ala pro val ser leu ala val val asn pro trp phe ala asn ser val gly
121/41                               151/51
aat gcc act cag gtg gtt tgg gtg gtg gga acc gcc ggt tgg aag gcc aag atg gat gtc
asn ala thr gln val val ser val val gly thr gly gly ser thr ala lys met asp val
161/61                               211/71
tac caa cgc acc gcc gcc gcc tgg aag cag ctc aag aac ggt atc acc acc cct atc ggt
tyr gln arg thr ala ala gly trp gln pro leu lys thr gly ile thr thr his ile gly
241/81                               271/91
tcg gcg gcc atg gcg cag gaa gcc aag agc gga tat ccg gcc act ccg atg gcc gtt tgc
ser ala gly met ala pro gln ala lys ser gly tyr pro ala thr pro met gly val tyr
301/101                               331/111
agc atg gac tcc gct ttt gcc acc gcg cag aat ccc ggt agc gcc tgg cag tat acc caa
ser leu asp ser ala phe gly thr ala pro asn pro gly gly gly leu pro tyr thr gln
361/121                               391/131
gtc gga ccc aat ccc tgg tgg agt gcc gac gac aat agc ccc acc ttt aac tcc atg cag
val gly pro asn his trp trp ser gly asp asp asn ser pro thr phe asn ser met gln
421/141                               451/151
gtc tgt cag aag tcc cag tgc cag ttc agc aag gcc gac agc gag aac atg cca atc cag
val cys gln lys ser gln cys pro phe ser thr ala asp ser gln asn leu gln ile pro
481/161                               511/171
cag tac aag cct tgg gtc gtg atg gcc gtc aac aag gcc aag gtc cca gcc aac gcc tcc
gln tyr lys his ser val val met gly val asn lys ala lys val pro gly lys gly ser
541/181                               571/191
gcg ttc ttc ttc ccc acc acc gac gcc gcc ccc acc gcc ggt tgt gtg gcc atc gac gat
ala phe phe phe his thr thr asp gly gly pro thr ala gly cys val ala ile asp asp
601/201                               631/211
gcc aag atg gtg cag atc atc cgt tgg atg cgg cct ggt gcg gtg atc gcc atc gcc aag
ala thr leu val gln ile ile arg trp leu arg pro gly ala val ile ala ile ala lys
661/221
taa
OCH

```

SEQ ID N° 44F

FIGURE 44F

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Fragment cloné en fusion avec phoA

1/1 31/11
 gat atc ccc gga cac cag gtc atc cgg aga gat ggt gat cga ggc tgg gac cgg cag goa
 asp leu pro gly his gln val ile arg arg asp gly asp arg gly ser asp pro gln ala
 61/21 91/31
 tcc ggt agc cag agg cac cag cat cag caa car cgc gat gcc cag cat gcc gcg cgg tgg
 ser gly ser gln arg his gln his gln gln his arg asp gly gln his ala ala pro ser
 121/41 151/51
 ggt acg tgc tac tgg cga tcc ttg gga tga cgg tgg ggc ata gcc agc ggc cac cag atc
 gly pro cys his ser arg ser leu gly oPa arg trp gly ile ala ser ala his gln val
 181/61 211/71
 atc gtg ccc gac cgg gca tgc cgc gtc gcc aag ctg tgg gcc gcg ggt tap agc ggt agc
 ile val pro asp arg ala cys arg val gly lys leu ser gly ala gly AMB ser gly ser
 241/81 271/91
 gtg cga ccc agg atg ggg aat gct cgg ggg tca cgg gcg aag tgg tag cgg cgg atg atg
 val arg pro arg met ala asn ala arg gly ser pro ala lys trp AMB pro arg met met
 301/101 331/111
 tgg gtg aag ccc aac cgg agg tac aac cgc cac gcc tga ttg tcc tca ccg ttg gtc tcc
 ser val lys pro asn arg arg tyr asn arg his ala arg leu ser ser pro leu val ser
 361/121 391/131
 ggt gtg gag agc agg asg ttg tcc tgg tgg cga tgg gcc agc agt agc agc gcc aac gcc
 gly val glu ser arg thr leu ser ser ser arg arg ala ser arg ala asn ala
 421/141 451/151
 tcc ccg agg cca cgg cct tga gcg cgg gga agg atg tgc aat tca gtc aac tgg aag tag
 ser pro arg pro arg pro oPa ala arg gly arg met cys asn ser val asn ser lys AMB
 481/161 511/171
 ctg gtc atc agt cgg gcg atc gct agg cgc gga aag ccg ctg cgt tgc aag ccc agt acc
 leu val ile ser arg ala ile ala arg arg gly lys pro leu arg cys lys pro ser thr
 541/181 571/191
 ccc tgg tgt tgc cac cac tgg ccg gcc gcc ccg gga tag ccg tac gcc acc ccg agc att
 thr cys cys cys his his trp pro gly ala pro gly AMB pro tyr ala thr pro ser ile
 601/201 631/211
 gcc gcg ttg ctc agt tgg gcg gcc gac gcc agc gcc gtc tgg gcg gcc tgg gcc tgt
 gly ala leu leu ser ser ala ala asp gly ser ala val val ser ala ala ser ala cys
 661/221 691/231
 tgg ggt gcc gtt acc tgg atg gcc gcg acc gcc tgc sag ccg cgc gcc cgg atg tgc tcc
 ser ala ala val thr ser thr ala ala thr ala cys gln pro arg arg arg met cys ser
 721/241 751/251
 agc cac att ggg gcg cgc asa gtc tgg gtc ccc ctg ggg tag cgc atc gcc tgg aca tac
 ser his ile gly ala arg lys val ser val pro leu gly AMB arg ile ala ser thr tyr
 781/261 811/271
 acc gcc agg gca tca ccg agg cgg cgc tcc ata tgg ctg gcc gcc aga tgg atg agg aat
 thr val arg ala ser pro arg arg arg ser ile ser leu gly gly arg ser met arg asn
 841/281 871/291
 acc gcc aac gcg cgg tgt cct cct ccc gty atg aac cga tgc gtc ctt gcc cac cag tat
 ile ala acc ala arg cys pro pro his val met asn arg cys val leu ala his gln tyr
 901/301 931/311
 cgg acc agc cga tga gcc cgc cgc agc tgg acc ggg ctt gta ggg tat gcc cgt ttc cgc
 arg thr ser arg oPa gly arg pro arg trp thr gly leu val ala tyr gly arg phe arg

SEQ ID N° 45ZA

FIGURE 45ZA

FEUILLE DE REMPLACEMENT (REGLE 26)

148/185

961/321
 tca gct cgt cgc tgc ggc gcc gcc ggg ata gaa tgc acc ggc aac cag tgg tac ggc gca
 ser ala arg arg cys gly ala ala gly ile glu ser pro ala asn gln trp tyr gly ala
 1021/341
 gat tga cct cgt atc atc tga gtt agt tgc acc ggc aat ggg cat cgg cgt gtt atc ggt
 asp opa pro arg ile ile opa val ser cys pro arg asn gly his pro arg val ile gly
 1081/361
 att acg tga cag tct gtc gcc aag gag gga cgc atg cca ctc tcc gat cat gag cag cgg
 ile thr opa gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg
 1141/381
 atg ctt gac cag atc gag agc gat ctc tac gcc gaa gat ccc aag ttc gca tgg agt gtc
 met leu asp gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val
 1201/401
 cgt ggc ggg gcc ttc cgc gca cgg acc ggc cgg cgg cgt cgg cag ggc ggc ggc ttg ttc
 arg gly gly gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe
 1261/421
 atc atc ggt cgg ggg atg ttg gtt tcc gcc gtc ggc ttc aaa gag acc atg atc ggc agt
 ile ile gly leu gly met leu val ser gly val ala phe lys glu thr met ile gly ser
 1321/441
 ttc cgg ata ttc agc gtt ttc ggt ttt gtc gtc atg ttc ggt ggt gtc gtc tat gcc atc
 phe pro ile leu ser val phe gly phe val val met phe gly gly val val tyr ala ile
 1381/461
 acc ggt cct cgg ttg tcc gcc agg atg gat cgt gcc gga tgg gct gct ggg gct tgg agc
 thr gly pro arg leu ser gly arg met asp arg gly gly ser ala ala gly ala ser arg
 1441/481
 cag cgt cgt acc aag ggg gcc ggg gcc tca ttc acc agc cgt atg gaa gat c
 gln arg arg thr lys gly ala gly gly dec phe thr ser arg met glu asp

SEQ ID N° 452A (suite)

FIGURE 452A (suite)

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fragment seq452A en décalage moins 1 pour la phase de lecture

```

1/1 31/11
atc tcc ccc gac acc agg tca tcc gcc gag atg gcc atc gag gct cgg acc cgc agg cat
ile ser pro asp thr arg ser ser gly glu met val ile glu ala arg thr arg arg his
51/21 51/31
ccg gta gcc aga gcc acc agc atc agc aac atc gcc atg gcc agc arg ccc cgc cgt cgg
pro val ala arg gly thr ser ile ser aac ile ala met ala ser met pro arg arg arg
121/41 151/51
gtc ctt gcc act cgc gac cct tgg gat gac ggt ggg gcc tag cta gcc cgc acc agg tca
val leu ala thr arg asp pro trp asp asp gly gly ala AMB leu ala arg thr arg ser
181/61 211/71
tcg tgc cag acc ggg cat gcc gcc tcc gaa aga tgt cgg gcc cgg gtt aga gcc gta gcc
ser cys gln thr gly his ala ala ser ala ser cys acc ala arg val arg ala val ala
241/81 271/91
tgc gac cca gga tgg cga atg atc ggg ggt cac cgg cga agt ggt agc cgc gga tga tgt
cys asp pro gly trp arg met leu gly gly his arg arg ser gly ser arg gly OFA cys
301/101 331/111
cgg tga agc cca acc gcc ggt aca acc gcc acc ccc gat tgt cct cac cgt tgg cct ccc
arg OFA ser pro thr gly gly thr thr ala thr pro asp cys pro his arg trp ser pro
361/121 391/131
gtg tgg aga gca gga cgt tgt cct cgt cgc gac cgg ata gca gtc ggc gga cca acc cct
val trp arg ala gly arg cys pro arg arg asp arg leu ala val gly gly pro thr pro
421/141 451/151
ccc cga gcc cac gcc ctt gag cgc ggg gaa gga tgt gca att cag tca act cga agt ago
pro arg gly his gly leu glu arg gly glu gly cys ala ile gln ser thr arg ser ser
481/161 511/171
tgg tca tca gcc ggg cga tcc ata gcc gcc gaa aga acc tga gtt gca agc cca gta cca
trp ser ser val gly arg ser leu gly ala glu ser atg cys val ala ser pro val pro
541/181 571/191
cct gct gtt gcc aac aac gcc cgg gcc acc cgg gat agt agt acc cca ctc cga gcc tgg
pro ala val ala thr thr gly arg ala pro arg asp ser arg thr pro leu arg ala leu
601/201 631/211
ggc cgt tgc tca gtt cgg cgg ccc acc gaa gcc ccc tgg tgt cgc agt cct cgg acc gat
ala arg cys ser val arg arg pro thr ala ala pro trp cys arg arg pro arg pro val
661/221 691/231
cgg atg cgg ata cct cga cgg ccc cga ccc cct gcc agc cgc gtc gcc gga tgt gct cca
arg leu pro leu pro arg arg pro arg pro pro ala ser arg ala ala gly cys ala pro
721/241 751/251
gcc aca tgg ggg cga gca aag tct cgg tgc ccc tgg ggt agc gca tcc cgt cga cat aca
ala thr leu gly arg ala lys ser arg cys pro trp gly ser ala ser arg arg his thr
781/261 811/271
ccg tca ggg cat cac cga gcc gcc gct cca tat cgc tgg gcc gca gat cga tga gga ata
pro ser gly his his arg gly gly ala pro tgg arg trp ala ala asp arg OFA gly ile
841/281 871/291
ccg cca ccc cgc ggt gtc ctc ctc atg tga tga acc gat gcc tgc ttc cgc acc agt acc
ser pro thr arg gly val leu leu met OFA OFA thr asp ala cys leu arg thr ser ile
901/301 931/311
gga caa gcc gat gag gcc gcc cgc gct gga cgg gcc tgg tag cgt atg gcc gct tcc gct
gly gln ala asp gls ala ala arg ala gly arg gly leu AMB arg met ala val ser ala
961/321 991/331
cgc ctc gcc gct gcc gcc gcc cgg gcc tag aat cgc cgg cga acc agt ggt agc gcc cag
gln leu val ala ala ala pro pro gly AMB acc arg pro arg thr ser gly thr ala gln

```

SSQ ID N° 452B

FIGURE 452B

FEUILLE DE REMPLACEMENT (REGLE 26)

150/185

1021/341
 att gac ctc gta tca tct gag tta gtt ggc cga gta arg ggc atc cga gtg tta tgg gta
 ile asp leu val ser ser glu leu val ala arg ala met gly ile arg val leu ser val
 1081/361
 tta cgt gac agt ctg tgg gca agg agg gac gca tgc cac tct ccg atc atg agc agc gga
 leu arg asp ser leu ser ala arg arg asp ala cys his ser pro ile met ser ser gly
 1141/381
 tgc ttg acc aga tgg aga gcg ctc tct aag ccg aag atc cca agt tgg cat cga gtg tgg
 cys leu thr arg ser arg ala leu ser thr pro lys ile pro ser ser his cag val ser
 1201/401
 ggg ggg ggg ggt tcc gcg cac aga ccg cgc ggc ggc ggc tgc agg ggg cgg cgt tgt tca
 val ala gly ala ser ala his arg pro arg gly gly ala cys arg ala arg arg cys ser
 1261/421
 tca tgg gtc tgg gga tgt tgg ttt ccg gcg tgg cgt tca aag aga cca tga tgg gaa gtt
 ser ser val trp gly cys trp phe pro ala trp arg ser lys arg pro opa ser glu val
 1321/441
 tcc cga tac tca gcg ttc tgg gtt ttg tgg tga tgt tgg gtg gtg tgg tgt arg cca tca
 ser arg tyr ser ala phe ser val leu ser opa cys ser val val trp cys met pro ser
 1381/461
 ccg gtc ctc ggt tgt ccg gca gga tgg atc ggg ggg gat cgg cgg ctg ggg ctt cgc ggc
 pro val leu gly cys pro ala gly trp ile val ala asp arg leu leu gly leu arg ala
 1441/481
 agc gtc gta cca agg ggg ccg ggg gct cat tca cca gac gta tgg aag atc
 ser val val pro arg gly pro gly ala his ser pro ala val trp lys ile

SEQ ID N° 452B (suite)

FIGURE 452B (suite)

151/185

fragment seq452A en décalage moins 2 pour la phase de lecture

```

1/1                               31/11
tct acc cgg aca cca ggt cat cgg gcg aga tgg tga tgg agg ctg gga ccc gca ggc atc
ser pro arg thr pro gly his pro ala arg trp GFA ser arg leu gly pro ala gly ile
61/21                               91/31
cgg tag cca gag gca cca gca tca gca aca tgg cga agg cca gca tgc cgc gcc gtc ggg
arg AMB pro glu ala pro ala ser ala thr ser arg trp pro ala cys arg ala val gly
121/41                               151/51
tcc ttg cca ctg gag atc ctt ggg atg aag gtc ggg cat agg tag cgc gca cca ggt cat
ser leu pro leu ala ile leu gly met thr val gly his ser AMB arg ala pro gly his
181/61                               211/71
cgt gcc aga cgg ggc atg cgg cgt cgg caa gct ctg ggg cgc ggg tta gag cgg tag cgt
arg ala arg pro gly met pro arg arg gln ala val gly arg gly leu glu arg AMB arg
241/81                               271/91
ggc acc cag gat ggc gaa tgc tgg ggg gtc acc ggc gaa gtc gta gcc gcg gat gat gtc
ala thr gln asp gly glu cys ser gly val thr gly glu val val ala ala asp asp val
301/101                               321/111
ggt gaa gcc caa cgg gcg gta caa cgg cca cgc cgg att gtc ctg acc gtt ggt ctg cgg
gly glu ala gln pro ala val gln pro pro arg pro ile val leu thr val gly leu arg
361/121                               391/131
tgt gga gag gac gtt gtc ctg gtc ggc acc ggt tag cag tgg gcg ggc cca cgc ctg
cys gly glu gln asp val val leu val ala thr gly AMB gln ser ala gly gln arg leu
421/141                               451/151
ccc gag gcc acg gcc ttg agc gcg ggg aag gat gtc caa ttc agr caa ctg gaa gta gct
pro glu ala thr ala leu ser ala gly lys asp val gln phe ser gln leu glu val ala
481/161                               511/171
ggt cat cag tgg ggc gat cgc tag gcg cgg aaa gcc gct gcg ttg caa gcc cag tac car
gly his gln ser gly asp arg AMB ala arg lys ala ala ala leu gln ala gln tyr his
541/181                               571/191
ctg ctg ttg cca cca ctg gcc ggg cgc ccc ggg ata gcc gta cgc ccc tcc gag cat tgg
leu leu leu pro pro leu ala gly arg pro gly ile ala val arg his ser glu his trp
601/201                               631/211
cgc gtt gct cag ttc ggc gcc cga cgg cag cgc cgt gct gcc gcc ctg gcc ctg ttc
arg val ala gln phe gly gly arg arg gln arg arg gly val gly gly leu gly leu phe
661/221                               691/231
ggc tgc cgt tcc ctg gac gcc cgc gac cgc ctg cca gcc gcg tgg cgg gat gtc ctg cag
gly cys arg tyr leu asp gly arg asp arg leu pro ala ala pro pro asp val leu gln
721/241                               751/251
cca cat tgg ggc gcg caa agt ctg ggt gcc cct agg gta gcg cat cgc gtc gcc ata ccc
pro his trp gly ala gln ser leu gly ala pro gly val ala his arg val asp ile his
781/261                               811/271
cgc cag gcc atc acc gag gcg gcg ctg cat atc gct ggg cgg cag acc gat gag gaa tac
arg gln gly ile thr glu ala ala leu his ile ala gly arg gln ile asp glu glu tyr
841/281                               871/291
cgc caa cgc gcg gtc tcc tcc tcc tct gat gaa ccg atg cgt gcc tgc gta cca gta tgg
atg gln arg ala val ser ser ser cys asp gln pro met arg ala cys ala pro val ser
901/301                               931/311
gac aag cgg atg agg cgg ccc gcc ctg gac ggg gct tct agc gta tgg cgt tcc cca ctg
asp lys pro met arg pro pro ala leu asp gly ala cys ser val trp pro phe pro leu

```

SEQ ID N° 452C

FIGURE 452C

FEUILLE DE REMPLACEMENT (REGLE 26)

152/185

961/321 991/331
 agc tcc tgg cgg cgc cgc cgc gct aga atc gcc cgc gaa cca gtc gta cgg cgc aga
 ser ser ser leu arg arg arg arg asp arg ile ala arg glu pro val val arg arg arg
 1021/341 1051/351
 ttg acc tgg tac cat ctg agt tag ttg ccc ggc caa tgg gca tcc ggc tgt tat cgg tat
 leu thr ser tyr his leu ser AMB leu pro ala gln trp ala ser ala cys tyr arg tyr
 1091/361 1111/371
 tac gtc aca gtc tgt cgg caa gga ggg agc cat gcc act ctg cga tca tga gca ggc gat
 tyr val thr val cys arg gln gly gly thr his ala thr leu arg ser OPA ala ala asp
 1141/381 1171/391
 gat tga cca gat cga gag cgc tct cta cgc cga aga tcc caa gtt cgc atc gag tgt cgg
 ala OPA pro asp arg glu arg ser leu arg arg arg ser gln val arg ile glu cys pro
 1201/401 1231/411
 tgg cgg ggg ctt cgc cgc acc gac cgc ggg ggc ggc cat gca ggg cgc ggc gtt gtt cat
 trp arg gly leu pro arg thr asp arg ala ala ala pro ala gly arg gly val val his
 1291/421 1291/431
 cat cgg tct ggg gat gtt ggt ttc cgg cgt gcc gtt caa aga gac cat gat cgg aag ttt
 his arg ser gly asp val gly phe arg arg gly val gln arg asp his asp arg lys phe
 1321/441 1351/451
 ccc gat act cag cgt ttr cgg ttt tgt cgt gat gct cgg tgg tgt ggt gta tgc cat cac
 pro asp thr gln arg phe arg phe cys arg asp val arg trp cys gly val cys his his
 1381/461 1411/471
 cgg acc tgg gtt gtc cgg cag gat gga tgg tgg cgg atc cgc tgc tgg ggc ttc ggc cca
 arg ser ser val val arg gln asp gly ser trp arg ile gly cys trp gly phe ala pro
 1441/481 1471/491
 ggc tgg tac caa ggg ggc cgg ggg ctc att cac cag cag tat gga aga tc
 ala ser tyr gln gly gly arg gly leu ile his gln pro tyr gly arg

SEQ ID N° 452C (suite 1)

FIGURE 452C (suite 1)

ORF de seq 452A directement en fusion avec phoA
 cag tat gtc ggc aag gag gga gcc atg cca ctc tcc gat cat gag cag cgg
 gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg
 1141/381 1171/391
 atg ctc gac cag atc gag agc ggt ctc tac gcc gaa gat ccc aag ttc gaa tgg agt gtn
 met leu asp gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val
 1201/401 1231/411
 cgt gcc ggg gcc ttc cgc gaa cgc acc gcc cgg cgg cgg cta cag gcc ggc ggc ttg ttc
 arg gly gly gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe
 1261/421 1291/431
 atc atc ggt cgg ggg atg ttg gtt tcc gcc gtc ggc ttc aaa gag acc atg atc gga agt
 ile ile gly leu gly met leu val ser gly val ala phe lys glu thr met ile gly ser
 1321/441 1351/451
 ttc cgg ata atc agc gtt ttc ggt ttt gtc gtc atg ttc ggt ggt gtc gtc tat gcc atc
 phe pro ile leu ser val phe gly phe val val met phe gly gly val val tyr ala ile
 1381/461 1411/471
 acc ggt tct cgg tgg acc gcc agc atg gac gcc gcc gga tgg gcc gat ggg gcc tgg cgc
 thr gly pro arg leu ser gly arg met asp arg gly gly ser ala gly ala ser arg
 1441/481 1471/491
 cag cgt cgt acc aag ggg gcc ggg gcc tca ttc acc agc cgt atg gaa gat c
 gln arg arg thr lys gly ala gly gly ser phe thr ser arg met glu asp

SEQ ID N° 45A

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 45A

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Séquence Rv2169c prédite par Cole et al., 1998 (Nature 393:537-544) et contenant Seq45A

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1/1 31/11
atg cca ctc tcc gat cat gag cag cgg atg ctt gac cag atc gag agc gct ctc tac gcc
Met pro leu ser asp his glu gln arg met leu asp gln ile glu ser ala leu tyr ala
61/21 91/31
gaa gat ccc aag ttc gca tgg agt gtc cgt ggc ggg gga ttc cgc gca cgg acc gag cgg
glu asp pro lys phe ala ser ser val arg gly gly gly phe arg ala pro thr ala arg
121/41 151/51
cgg cgc ctg cag gcc ggc ggc tgg ttc atc atc ggt ctg ggg atg ttg gtt tcc ggc gtg
arg arg leu gln gly ala ala leu phe ile ile gly leu gly met leu val ser gly val
181/61 211/71
ggc ttc aaa gag acc atg atc gga agt ttc cgg ata ctc agc gtt ttc ggc ttt gtc gtg
ala phe lys glu thr met ile gly ser phe pro ile leu ser val phe gly phe val val
241/81 271/91
atg ttc ggt ggt gtg gtg tat gcc atc acc ggt cct cgg tgg tcc ggc agg atg gat cgt
met phe gly gly val val tyr ala ile thr gly pro arg leu ser gly arg met asp arg
301/101 331/111
ggc gga tgg gat gct ggc gcc tgg cgc cag cgt cgt acc aag ggg gcc ggg ggc tca ttc
gly gly ser ala ala gly ala ser arg gln arg arg thr lys gly ala gly gly ser phe
361/121 391/131
acc agc cgt atg gaa gat cgg ttc cgg cgc cgt ttc gcc gag taa
thr ser arg met glu asp arg phe arg arg arg phe asp glu OCH

```

SEQ ID N° 45D

FIGURE 45D

ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv2169c

```

1/1 31/11
tga cag tct gtc gcc aag gag gga cgc atg cca ccc tcc gat cat gag cag cgg atg ctt
OPA gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg met leu
61/21 91/31
gac cag atc gag agc gct ctc tac gcc gaa gat ccc aag ttc gca tgg agt gtc cgt ggc
asp gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val arg gly
121/41 151/51
ggg ggc ttc cgc gca cgg acc ggc ggg cgg cgc ctg cag gcc gcc ggc tgg ttc atc atc
gly gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe ile ile
181/61 211/71
ggt ctg ggg atg tgg gtt tcc gcc gtg ggc ttc aaa gag acc atg atc gga agt ttc cgg
gly leu gly met leu val ser gly val ala phe lys gln thr met ile gly ser phe pro
241/81 271/91
ata ctc agc gtt ttc ggt ttt gtc gtg atg ttc cgt ggt gtg gtg tat gcc atc acc ggt
ile leu ser val phe gly phe val val met phe gly gly val val tyr ala ile thr gly
301/101 331/111
cct cgg ttg tcc gcc agg atg gat cgt gcc gga tca gct gct ggc ggt tgg cgc cag cgc
pro arg leu ser gly arg met asp arg gly gly ser ala ala gly ala ser arg gln arg
361/121 391/131
cgt acc aag ggg gcc ggg gcc taa ttc acc agc cgt arg gaa gat cgg ttc cgg cgc cgc
arg thr lys gly ala gly gly ser phe thr ser arg met glu asp arg phe arg arg arg
421/141
ttc gac gag taa
phe asp glu OCH

```

SEQ ID N° 45F

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 45F

154/185

```

1/1                               31/11
cag cag cgc cgc atc gac cag gcc ctc aag ccc ggt cac ttc tcc gag ttc ctc aac aac
gln pro arg arg ile asp gln gly leu thr pro gly his phe ser ala phe leu asn asn
61/21                               91/31
tcc ggt gaa cat cgc acc agg tta gcc ago aac ccc gag gac ccc cac acc act cgc aga
ser gly gln his arg thr arg leu gly ser asn pro ala asp pro his pro thr arg arg
121/41                               151/51
ccg gcc aac tca cag aca ccc tcc acg atg cag ggt atg cag acc ccc aga cgc cac tgc
pro ala asn ser gln thr pro ser thr met gln gly met arg thr pro arg arg his cys
181/61                               211/71
cgt cgc atc gcc gta ctc gcc gcc gtt agc atc gcc gcc act gtc gtt gcc gag tgc tgc
arg arg ile ala val leu ala ala val ser ile ala ala thr val val ala gly cys ser
241/81                               271/91
tcg gcc tcg aag cca agc gcc gga cca ctt ccc gac gcc aag ccc ctg gtc gag gag gcc
ser gly ser lys pro ser gly gly pro leu pro asp ala lys pro leu val gln glu ala
301/101                               331/111
acc gcc cag acc aag gct ccc aag agc gcc ccc atg gtc ctg arg gtc aac gcc aag atc
thr ala gln thr lys ala leu lys ser ala his met val leu thr val asn gly lys ile

```

SEQ ID N° 46A

FIGURE 46A

```

1/1                               31/11
agc cgc gcc gca tcg acc agg gcc tca cgc ccc gtc act tct ccc cgt thr tca aca att
ser arg ala ala ser thr arg ala ser arg pro val thr ser pro arg ser ser thr ile
61/21                               91/31
ccg gtc aac ttc gca cca ggt tag gca gca atc ccc cgc acc ccc acc ctc ctc gcc gcc
pro val asn ile ala pro gly AMB ala ala ile pro arg thr arg thr pro leu ala asp
121/41                               151/51
cgg cca act tcc agc cac ccc cta cga tgc agg gta tgc gga ccc cca gac gcc act gcc
arg pro thr his arg his pro leu arg cys arg val cys gly pro pro asp ala thr ala
181/61                               211/71
gtc gcc tcg ccg tcc tcc ccc ccc tta gca tcc ccc cca ctg tcc ttc ccc gct gct cgt
val ala ser pro ser ser pro pro leu ala ser pro pro leu ser leu pro ala ala arg
241/81                               271/91
cgg gct cga agc cca gcc gcc gac cac ttc ccc acc cca aga ccc tgg tcc agg agc cca
arg ala arg ser gln ala ala asp his phe arg thr arg ser arg tpp eer arg arg pro
301/101                               331/111
ccg cgc aga cca agg ctc tca aga gcc cgc cca tgg tgc tga ccc tca acc cca aga tc
pro arg arg pro arg leu ser arg ala arg thr tpp tpe opa arg ser thr ala arg

```

SEQ ID N° 46B

FIGURE 46B

155/185

```

1/1      31/11
gcc gcc ccc cat cga cca ggg cct cac gcc cgg tca ctt ctc cgt gtc cct cca caa ttc
ala ala pro his arg pro gly pro his ala arg ser leu leu arg val pro gin gin phe
61/21    91/31
cgg tga aca tog cac cag gtt agg aag caa tcc cgc gga ccc gaa ccc cac tgc ccg acc
arg opa thr ser his gin val arg gin gin ser arg gly pro ala pro his ser pro thr
121/41   151/51
ggc caa ctc aca gac acc ctc tac gat gaa ggg tat gcg gac acc cag acg cca atg ccg
gly gin leu thr asp thr leu tyr asp ala gly tyr ala asp pro gin thr pro leu pro
181/61   211/71
tog cat cgc cgt cct cgc cgc cgt tag cat cgc cgc cac tgt cgt tgc cgg atg ctc gtc
ser his arg arg pro arg arg arg amb his arg arg his cys arg cys arg leu leu val
241/81   271/91
ggg ctc gaa gcc aag cgg cgg acc act tcc gga cgc gaa gcc gac gat cga gga gcc cac
gly leu glu ala lys arg arg thr thr ser gly arg glu ala ala gly arg gly gly his
301/101  331/111
cgc gca gac caa ggt tct caa gag cgc gca cat ggt gcc gac gcc caa cgg caa gat c
arg ala asp gin gly ser gin glu arg ala his gly ala asp gly gin arg gin asp

```

SEQ ID N° 46C

FIGURE 46C

156/185

Sequence codante Rv1411c prédite par Cole et al., 1999 (Nature 393: 537-544) et contenant seq46A:

```

1/1                               31/11
atg egg acc acc aga cgc cac tgc cgt cgc atc gcu gtc ctc gcc gcc gtc agc atc gcc
Met arg thr pro arg arg his cys arg arg ile ala val leu ala ala val ser ile ala
61/21                               91/31
gcc act gtc gct gcc ggc tgc tgc tgc tgc aag cca agc gcc gga cca ctt cgg gac
ala thr val val ala gly cys ser ser gly ser lys pro ser gly gly pro leu pro asp
121/41                               151/51
ggc aag cgg ctg gtc gag gag gcc acc ggc cag acc aag gct ctc aag agc ggc cac atg
ala lys pro leu val glu glu ala thr ala gln thr lys ala leu lys ser ala his met
181/61                               211/71
gtg ctg acg gtc aac gcc aag atc cgg gga ctg tct ctg aag acg ctg agc gcc gat ctc
val leu thr val aac gly lys ile pro gly leu ser leu lys thr leu ser gly asp leu
241/81                               271/91
acc acc aac ccc acc gcc ggc acg gga aac gtc aag ctc acg ctg ggt ggc tct gat atc
thr thr asn pro thr ala ala thr gly asn val lys leu thr leu gly gly ser asp ile
301/101                              331/111
gat gcc gac ttc gtg gtg ttc gac ggc atc ctg tac gcc acc ctg acg ccc aac cag tgg
asp ala asp phe val val phe asp gly ile leu tyr ala thr leu thr pro asn gln ttp
361/121                              391/131
agc gat ttc ggt ccc gcc gcc gac atc tac gac ccc gcc cag gtg ctg aat cgg gat acc
ser asp phe gly pro ala ala asp ile tyr asp pro ala gln val leu asn pro asp thr
421/141                              451/151
ggc ctg gcc aac gtg ctg ggc aat ttc gcc gac gca aaa gcc gaa ggc cgg gat acc atc
gly leu ala asn val leu ala asn phe ala asp ala lys ala glu gly arg asp thr ile
481/161                              511/171
aac gcc cag aac acc atc cgc atc agc ggc aag gta tgc gca cag gcc gtg aac cag ata
asn gly gln asn thr ile arg ile ser gly lys val ser ala gln ala val asn gln ile
541/181                              571/191
ggc cgg cgg ttc aac gag acg cag cgg gtg cgg gcc acc gtc tgg att cag gag acc ggc
ala pro pro phe asn ala thr gln pro val pro ala thr val ttp ile gln glu thr gly
601/201                              631/211
gat cat cca ctg gca cag gcc cag ttc gac cgc ggc tgc ggc aac tcc gtc cag atg acc
asp his gln leu ala gln ala gln leu asp arg gly ser gly asn ser val gln met thr
661/221                              691/231
tgg tgc aaa tgg ggc gag aag gtc cag gtc acg aag ccc cgg gtg agc tga
leu ser lys ttp gly glu lys val gln val thr lys pro pro val ser DPA

```

SEQ ID N° 46D

FIGURE 46D

157/185

ORF d'après par Cole et al., 1998 (Nature 393: 537-544);
et contenant la séquence codante Rv1411c:

```

1/1 31/11
tag ctc acc cag gtt gga cag gtt cag tgc ctc ggc cag cag gtc ggc ggt gaa ttg gcc
AMB leu thr gln val gly pro val gln cys leu gly his his val gly gly glu leu ala
61/21 91/31
gtc ggg caa tac atc gac gac cgt cag aca cag gcc gtt gac agc gat cga gtc gcc gtg
val gly gln tyr ala asp asp arg gln thr his ala val asp ser asp arg val ala val
121/41 151/51
gcc ggc gtc ggc ggt aac cat cgg acc gcg gat ggt cag cag cgc cgc atc gac cag gcc
ala gly val gly gly asn his arg thr ala asp gly gln pro arg arg ile asp gln gly
181/61 211/71
ctc acc ccc ggt aac ttc tcc gcg ttc ctc aac aat tcc ggt gaa cag cgc acc agg tta
leu thr pro gly his phe ser ala phe leu aso ase ser gly glu his arg thr arg leu
241/81 271/91
ggc agc aat ccc gcg gac cag cag ccc act cgc cga cag gcc aac tca cag aca ccc tct
gly ser asn pro ala asp pro his pro thr arg arg pro ala asn ser gln thr pro ser
301/101 331/111
acg atg cag ggt atg cgg acc ccc aga cgc cag tgc cgt cgc atc gcc gtc ctc gcc gcc
thr met gln gly met arg thr pro arg arg his cys acg arg ile ala val leu ala ala
361/121 391/131
gtt agc atc gac gcc act gtc gtc gcc gcc tgc tgc cgc ggc tgc aag cca agc ggc gga
val ser ile ala ala thr val val ala gly cys ser ser gly pro ser gly gly
421/141 451/151
cca ctt ccc gac gcg aag cgc ctg gtc gag gag gcc acc gcc cag acc aag gct ctc aag
pro leu pro asp ala lys pro leu val glu glu ala thr ala gln thr lys ala leu lys
481/161 511/171
agc gcg cag atg gtc ctg acg gtc aac gcc aag ctc cgc ggc ctg tot ctg aag acg cgc
ser ala his met val leu thr val asn gly lys ala pro gly leu ser leu lys thr leu
541/181 571/191
agc ggc gat ctc acc aca aac ccc acc gcc gcc cgc ggc aac gtc aag ctc acc cgc ggt
ser gly asp leu thr thr asn pro thr ala ala thr gly asn val lys leu thr leu gly
601/201 631/211
ggg tct gat ctc gat gcc gaa ttc gtc gtc ttc gac ggc atc ctc tac gcc acc ctc acg
gly ser asp ile asp ala asp phe val val phe asp gly ile leu tyr ala thr leu thr
661/221 691/231
ccc aac cag tgg agc gat ttc ggt acc gcc gcc gac atc tan gac ccc gcc cag gtc cgc
pro asn gln trp ser asp phe gly pro ala ala asp ile tyr asp pro ala gln val leu
721/241 751/251
aat cgc gaa acc gcc ctg gcc aac gtc ctg gcc aat ttc gcc gac gcc aac gcc gaa ggc
asn pro asp thr gly leu ala asn val leu ala asn phe ala asp ala lys ala glu gly
781/261 811/271
cgg gat acc atc aac ggc cag aac acc atc cgc acc agc ggc aag gta tgc gca cag gcc
arg asp thr ile asn gly gln asn thr ile arg ile ser gly lys val ser ala gln ala
841/281 871/291
gtg aac cag ata gcg cgc cgc tta aac gcg acc cag cgc ctg cgc gtc acc gtc atc
val asn gln ile ala pro pro phe asn ala thr gln pro val pro ala thr val trp ile
901/301 931/311
cag gac acc gcc gat cat caa ctg gaa cag gcc cag tgc gac cgc gcc tgc gcc aac tcc
gln gaa thr gly asp his gln leu ala gln ala gln leu asp arg gly ser gly asn ser
961/321 991/331
gtc cag atg acc ttc ttc aaa tgg gcc gag aag gtc cag gtc acc aag ccc cgc gcc agc
val gln met thr leu ser lys trp gly glu lys val gln val thr lys pro pro val ser
1021/341
rqa
opa

```

SEQ ID N° 46F

FEUILLE DE REMPLACEMENT (REGLE 26)

158/185

1/1	31/11
gag ctg gtc aac ggc gcc gcc atc gac gac	gcc gcc gtc gtc acc tgc cgg ccg gac agc
glu leu val asn gly ala gly ile asp asp	ala ala val val thr cys arg pro asp ser
61/21	91/31
ctg gcc gat gcc cag cag atg gtc gcy gcy	gca ctg gcc cga tat gcc cgt tgc gac gga
leu ala asp ala gln gln met val glu ala	ala leu gly arg tyr gly arg leu asp gly
121/41	151/51
gtg ttg gtc gcc tcg gcc agc aac cat gtc	ggc gcc att acc gag atg gcc gcc gag gac
val leu val ala ser gly ser asn his val	ala pro ala thr glu met ala val glu asp
181/61	211/71
ttc gac gct gtc atg gac gcc aac gty cgg	ggt gcc tgg ctg gtc tgc cgg gcc gcc ggc
phe asp ala val met asp ala asn val arg	gly ala trp leu val cys arg ala ala gly
241/81	271/91
cgg gtc ccg ctg gag cag ggt cag gcc gcc	agc gtc gtc ctg gtc tgc tcc gtt ccg gcc
atg val leu leu glu gln gly gln gly gly	ser val val leu val ser ser val arg gly
301/101	331/111
ggg ttg gcc aat gcc gcc ggt tac agc gcc	tac tgc ccg tgc aag gcc gcc acc gat c
gly leu gly asn ala ala gly tyr ser ala	tyr cys pro ser lys ala gly thr asp

SEQ ID N° 47A

FIGURE 47A

1/1	31/11
agc tgg taa aac gcc ccg gca tgg acg acc	ccg ccg ccg ccg aga cct gcc gcc ccg acc gcc
ser trp ser thr ala pro ala ser thr thr	pro pro ser opa pro ala gly arg thr ala
61/21	91/31
tgg ccg atg ccc acc aga tgg tgg agg agg	cac tgg gtc gat atg gcc gtt tgg atg gcc
trp pro met pro ser arg trp ser arg arg	his trp ala asp met ala val trp thr glu
121/41	151/51
tgc tgg tgg cct cgg gca gca ecc atg tgg	ggc gca tra ccg aga tgg ccg tgc agg acc
cys trp trp pro arg ala ala thr met trp	arg pro leu pro arg trp pro ser arg thr
181/61	211/71
tcg acc ctg tga tgg acc cga aag tgc gcc	ggg gtc cct gcc tgg tgt gtc ggc agg gcc
ser thr leu opa trp thr arg thr cys gly	val pro gly trp cys val gly arg pro asp
241/81	271/91
ggg tgc tgc tgg agc agg gtc agg gcc gcc	ggc tgg tgc tgc tgc cgt ccg ttc gcc gcc
gly cys cys ser ser arg val arg ala ala	ala trp cys trp cys arg pro phe ala ala
301/101	331/111
ggt tgg gca arg ccg ccg gtt acc gty cgt	acc gcc cgt cga agg cgg gca ccg atc
gly trp ala met pro pro val thr ala arg	thr ala arg arg arg ala pro ile

SEQ ID N° 47B

FIGURE 47B

159/185

```

1/1                               31/11
gct ggt caa cgg cgc cgg cat cga cga cgc cgc cgt cgt gac ctg cgg gcc gga cag cct
ala gly gln arg arg arg his arg arg arg arg arg asp leu pro ala gly gln pro
61/21                               91/31
ggc cga tgc cca gca gat ggt cga ggc ggc act ggg cgg ata tgg cgg ttt gga cgg agt
gly arg cys pro ala asp gly arg gly gly thr gly pro ile trp pro phe gly arg ser
121/41                               151/51
gtt ggt ggc ctc ggg cag caa cca tgt ggc gcc cat taa cga gat ggc cgt cga gga ctc
val gly gly leu gly gln gln pro cys gly ala his tyr arg asp gly arg arg gly leu
181/61                               211/71
cga cgc tgt gat gga cgc gaa cgt ggc ggc tgc ctg gct ggt gtg tgg ggc ggc cgg acg
arg arg cys asp gly arg glu arg ala gly cys leu ala gly val ser gly gly arg thr
241/81                               271/91
ggt gct gct cga gca ggg tca ggg cgg cag cgt ggt gct ggt gtc gtc cgt tgg cgg cgg
gly ala ala arg ala gly ser gly arg gln arg gly ala gly val val arg ser arg arg
301/101                               331/111
gct ggg caa tgc cgc cgg tta cag cgc gta ctg ccc gtc gaa gcc ggg cag cga tc
val gly gln cys arg arg leu gln arg val leu pro val glu gly gly his arg

```

SEQ ID N° 47C

FIGURE 47C

160/185

Séquence codante Rv1714 prédite par Cois et al., 1996 (Nature 393: 537-544) et contenant seq 47A:

```

1/1                               31/11
gtg gag gaa atg ggg ctg gct cag cag gtg cgg aac ctg ggt ctg ggg agc ttc agc gtg
val glu glu met ala leu ala gln gln val pro asn leu gly leu ala arg phe ser val
61/21                               51/31
cag gac aag tgg atc ctg atc acc ggc ggc acc ggt tgg ttg ggc cga gtt gcc gcc cgg
gln asp lys ser ile leu ile thr gly ala thr gly ser leu gly arg val ala ala arg
121/41                               151/51
ggc ctg gcc gac ggc gga gcc cgg ctg aca ctg gcc gcc gcc aac tgg gcc ggt ctg gcc
ala leu ala asp ala gly ala arg leu thr leu ala gly gly asn ser ala gly leu ala
181/61                               211/71
gag ctg gtc aac gcc gcc gcc atc gac gac gcc gcc gtc gtc gcc tgg cgg cgg gac agc
glu leu val asn gly ala gly ile asp asp ala ala val val thr cys arg pro asp ser
241/81                               271/91
ctg gcc gat gcc cag cag atg gtc gag gcc gca ctg gcc cga tat gcc cgt ttg gac gga
leu ala asp ala gln gln met val glu ala ala leu gly arg tyr gly arg leu asp gly
301/101                               331/111
gtg ttg gtc gcc tgg gcc agc aac cat gtg gcc gcc att acc gag atg gcc gtc gag gac
val leu val ala ser gly ser asn his val ala pro ile thr glu met ala val gln asp
361/121                               391/131
ttc gac gct gtc atg gac gcc aac gtg cgg ggt gcc tgg ctg gtc tgt cgg gcg gcc gga
phe asp ala val met asp ala asn val arg gly ala trp leu val cys arg ala ala gly
421/141                               451/151
cgg gtg ctg ctg gag cag ggt cag gcc gcc agc gtg gtg ctg gtc tgg tcc gtt cgc gcc
arg val leu leu glu gln gly gln gly ser val val leu val ser ser val arg gly
481/161                               511/171
ggg ttg ggt aat gcc gcc ggt tac agc ggc tac tgc cgg tgg aag gcc gcc acc gat ctg
gly leu gly asn ala ala gly tyr ser ala tyr cys pro ser lys ala gly thr asp leu
541/181                               571/191
ttg gcc aag aca tgg ggc gcc gaa tgg gcc ggt aac gcc att cgg gtg aac gcg ctg gcc
leu ala lys thr leu ala ala glu trp gly gly his gly ile arg val asn ala leu ala
601/201                               631/211
ccg acg gty ttc cgg tcc gcc ggc acc gag tgg atg ttc acc gac gat cgg aag gcc cgg
pro thr val phe arg ser ala val thr glu trp met phe thr asp asp pro lys gly arg
661/221                               691/231
gcc acc cgg gag gcc aag ctg gcc cgg atc ctg ttg cgg cgg ttc gcc gaa cgg gag gac
ala thr arg glu ala met leu ala arg ile pro leu arg arg phe ala glu pro glu asp
721/241                               751/251
ttc gtc gcc gcc ctg atc tat ctg ctg agc gac gcc cgg agc ttc tac acc gcc cag gtg
phe val gly ala leu ile tyr leu leu ser asp ala ser ser phe tyr thr gly gln val
781/261                               811/271
atg tat ctg gac gcc ggg tac acc gca tgc tga
met tyr leu asp asp gly gly tyr thr ala cys GPA

```

SEQ ID N° 47D

FIGURE 47D

161/185

ORF d'après Cole et al., 1998 (Nature 393: 537-544) et contenant la séquence codante Rv1714:

```

24/1                               34/11
tag gtg gag gaa atg ggg ctg gct cag cag gtg cgg aac ctg ggt ctg ggg cgc ttc agc
AMB val glu glu met ala leu ala glu gin val pro asn leu gly leu ala arg phe ser
84/21                               114/31
gtg cag gac aag tgg atc ctg atc acc ggc ggg acc ggt tgg ttg ggg cga gtt gcc gcc
val thr asp lys ser ile leu ile thr gly ala thr gly ser leu gly arg val ala ala
144/41                               174/51
cgg ggg ctg gcc gac ggg gga ggg ggg ctg acc cgg gcc ggc gcc aac tgg gcc ggt ctg
arg ala leu ala asp ala gly ala arg leu thr leu ala gly gly asn ser ala gly leu
204/61                               234/71
gcc gag ctg gtc aac ggc gcc ggc atc gac gac gcc gcc gtc gtg acc tgg egg ctg gac
ala glu leu val asn gly ala gly ile asp asp ala ala val val thr cys arg pro asp
264/81                               294/91
agc ctg gcc gat gcc cag cag atg gtc ggg ggg gca ctg ggc cga tat gcc cgt ttt gac
ser leu ala asp ala gin gin met val glu ala ala leu gly arg tyr gly arg leu asp
324/101                              354/111
gga gtg ttg gtg gcc tgg ggc agc aac cat gtg ggg gcc atc acc gag atg gcc gtc gag
gly val leu val ala ser gly ser asn his val ala pro ile thr glu met ala val glu
384/121                              414/131
gac ttc gac gct gtg atg gac ggc aac gtg cgg ggt gcc tgg ctg gtg tgt egg gag gcc
asp phe asp ala val met asp ala asn val arg gly ala trp leu val cys arg ala ala
444/141                              474/151
gga cgg gtg ctg ctg gag cag ggt cag ggc ggc agc gtg gtg ctg gtg tgg tcc gtt ego
gly arg val leu leu glu gin gly gin gly gly ser val val leu val ser ser val arg
504/161                              534/171
ggc ggg ttg ggc aac gcc gcc ggt tat agc ggc tcc tgc cgg ttg aag gcc gcc acc gat
gly gly leu gly asn ala ala gly tyr ser ala tyr cys pro ser lys ala gly thr asp
564/181                              594/191
ctg ttg gcc aag ach ttg ggc gcc gas tgg gcc ggt cag gcc att cgg gtg aac ggc ctg
leu leu ala lys thr leu ala ala glu trp gly gly his gly ile arg val asn ala leu
624/201                              654/211
ggc cgg acc gtg ttc cgg tcc ggg gtg acc gag tgg atg ttc acc gac gat cgg aag gcc
ala pro thr val phe arg ser ala val thr glu trp met phe thr asp asp pro lys gly
684/221                              714/231
cgg gcc acc cgg gag ggc atg ctg gcc cgg acc cgg ttg cgc cgc ttc gcc gaa cgg gaa
arg ala thr arg glu ala met leu ala arg ile pro leu arg arg phe ala glu pro glu
744/241                              774/251
gac ttc gtc gcc gcc cgg atc tat ctg ctg agc gac gcc tgg agt tcc tac acc ggc cag
asp phe val gly ala leu ile tyr leu leu ser asp ala ser ser phe tyr thr gly glu
804/261                              834/271
gtg atg tat ctg gac ggc ggg tcc acc gaa tgc tga
val met tyr leu asp gly gly tyr thr ala cys o6A

```

SEQ ID N° 47F

FIGURE 47F

162/185

```

1/1                               31/11
agg ctc atg agc aag aag gtt ctc atc att ggc gag ggt gtc ggc ggc ctg acc acc ggc
arg leu met ser lys thr val leu ile leu gly ala gly val gly gly leu thr thr ala
61/21                             91/31
gac acc ctc cgt caa ctg cta cca cct gag gat c
asp thr leu arg gln leu leu pro pro glu asp

```

SEQ ID N° 48A

FIGURE 48A

```

1/1                               31/11
ggc tca tga gca aga cgg ttc tca tcc tgg ggc gag gty tgg gag gcc tga cca cgg cgg
gly ser OPA ala arg arg phe ser ser leu ala arg val ser ala ala OPA pro pro pro
61/21                             91/31
aca ccc tcc gtc aac tgc tac cac ctg agg atc
thr pro ser val asp cys tyr his leu arg ile

```

SEQ ID N° 48B

FIGURE 48B

```

1/1                               31/11
gct cat gag caa gac ggc tct cat cct tgg agc ggg tgt cgg cgg cct gac cac cgc cga
ala his glu gln asp gly ser his pro ttp arg gly cys arg arg pro asp his arg arg
61/21
cac cct cgg tca aac gct acc acc tga gga tc
his pro pro ser thr ala thr thr OPA gly

```

SEQ ID N° 48C

FIGURE 48C

163/185

Séquence codante RV0331 prédite par Cole et al., 1998 (Nature 393: 537-544) et contenant seq45A:

```

1/1 31/11
atg agc aag acg gtt ctc atc ctc ggc ggc ggt gtc ggc ggc atg acc acc gcc gcc acc
Met ser lys thr val leu ile leu gly ala gly val gly gly leu thr thr ala asp thr
61/21 91/31
ctc cgt caa ctg cta cca cct gag gat cga atc ata tgg gtg gac agg agc ttt gcc ggg
leu arg gln leu leu pro pro glu asp arg ile ile leu val asp arg ser phe asp gly
121/41 151/51
aag ctg ggc ctg tgg ttg cta tgg gtc tgg cgg gcc tgg cgg cgg cct gac gac gtc cgc
thr leu gly leu ser leu leu trp val leu arg gly trp arg arg pro asp asp val arg
181/61 211/71
gtc cgc ccc acc gag ggc tgg ctg acc ggt gtg gaa atg gtt acc gca acc gcc gcc acc
val arg pro thr ala ala ser leu pro gly val glu met val thr ala thr val ala his
241/81 271/91
att gac atc gcc gcc cag gta gtg cdc acc gac aac agc gtc atc gcc tat gac gcc tgg
ile asp ile ala ala gln val val his thr asp asn ser val ile gly tyr asp ala leu
301/101 331/111
gtg atc gca tta ggt ggc ggc ctg aac acc gac gcc gtt ccc gga ctg tgg gac gcc ctc
val ile ala leu gly ala ala leu asn thr asp ala val pro gly leu ser asp ala leu
361/121 391/131
gac gcc gac gtc gag ggc caa ttc tac acc ctg gac gcc cgg gcc gag ctg cgt gcc aag
asp ala asp val ala gly gln phe tyr thr leu asp gly ala glu leu ala ala lys
421/141 451/151
gtc gag ggc ctc gag cat ggc cgg atc gct gtg gcc atc gcc ggg gtg cgg ttc aaa tgc
val glu ala leu glu his gly arg ile ala val ala ile ala gly val pro phe lys cys
481/161 511/171
caa gcc gaa cgg ttc gaa gcc gcc ttt ctg atc gcc gcc caa ctc ggt gac cgc tac gcc
pro ala pro phe gln ala ala phe leu ile ala ala gln phe glu
541/181 571/191
acc gga acc gta cag atc gac aag ttc acg cct gac cgg ctg cgg atg acc gtc gcc ggt
thr gly thr val gln ile asp thr phe thr pro asp pro leu pro met pro val ala gly
601/201 631/211
ccc gag gtc gcc gag gct ttg gtc tgg atg ctc aag gat caa ggt gtc gcc ttc cat ccc
pro glu val gly glu ala leu val ser met leu lys asp his gly val gly phe his pro
661/221 691/231
cgc aag gcc cta cct cgc gtc gat gag gcc gaa agc aag atg ccc ttc ggt gcc gcc acc
arg lys ala leu ala arg val asp glu ala ala arg thr met his phe gly asp gly thr
721/241 751/251
ccc gaa cgg ttc gat ctg ctc gcc gtg gtc ccc cgg acc ggc gcc tcc gcc gcc gcc ggg
ser glu pro phe asp leu leu ala val val pro pro his val pro ser ala ala ala arg
781/261 811/271
taa cgc ggt ctc agc gaa tcc ggg tgg ata ccc gtg gac cgg cgc acc ctg tcc act agt
ser ala gly leu ser glu ser gly trp ile pro val asp pro arg thr leu ser thr ser
841/281 871/291
gcc gac aac gtg tgg gcc atc ggc gat gcc acc gtg ctg acc ctg cng aat gcc aac cng
ala asp asn val trp ala ile gly asp ala thr val leu thr leu pro asn gly lys pro
901/301 931/311
ctg ccc aag gct gcc ggc ttc gcc gaa gcc cag gcc gca gtc gtc gcc cag gcc gtc gcc
leu pro lys ala ala val phe ala glu ala gln ala ala val val ala his gly val ala
961/321 991/331
ccc cat ctc ggt tac gac gta ggt gag cgc caa ttc acc gcc acc gcc gcc tgc tac gtc
arg his leu gly tyr asp val ala glu arg his phe thr gly thr gly ala cys tyr val
1021/341 1051/351
gag acc ggt gac cdc cag gca gcc aag gcc gcc gcc gct ttc ttc cgt cgc gcc gcc ccc
glu thr gly asp his gln ala ala lys gly asp gly asp phe phe ala pro ser ala pro
1081/361 1111/371
tgg gtg acc ctg tac cgg cgg tgg cgg gag ttc cdc gag gag aag gtc gca caa gaa ctg
acc val thr leu tyr pro pro ser atg glu phe his glu glu lys val ala gln glu leu
1141/381
gcc tgg cgc acc cgc tgg aag acc tga
ala trp leu thr arg trp lys thr oxa

```

SEQ ID N° 48D

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 10D

164/185

ORF d'après Cole et al., 1998 (Nature 393: 537-544) et contenant la séquence codante RV0331:

```

1/1                               31/11
tga aca ccc ggg cgg aag cgg cga caa tgg cgg aaa acc ggt cgg cgg gaa tgc tgc ggg
OPA thr pro ala pro thr arg arg gln ser arg lys thr gly pro arg glu cys cys gly
61/21                               91/31
cca tgg gcc gat aat agt ttg act gac tgg gtc agt cac ccc aag acc ttg cgc aag act
pro trp ala asp asn ser leu thr asp ser val ser his pro lys thr leu arg lys thr
121/41                               151/51
ggc ggc gaa ttt aat att cca aag ata tat gga act cga tgc gaa gga atc agg ctc atg
ala ala glu ser asn ile pro lys ile tyr gly thr arg cys glu gly ile arg leu met
181/61                               211/71
agc aag acg gtt ctc atc ctc ggc ggc ggt gtc ggc ggc cty acc acc gcc gac acc ctc
ser lys thr val leu ile leu gly ala gly val gly gly leu thr thr ala asp thr leu
241/81                               271/91
cgt caa ctg cta cca cct gag gat cga atc ata ttg gtg gac agc agc ttt gac ggc acg
arg gln leu leu pro pro glu asp arg ile ile leu val asp arg ser phe asp gly thr
301/101                              331/111
ctg ggc ttg tgg cta tgg gtg ttg cgg ggc tgg cgg tgg cct gac gac gtc cgc atc
leu gly leu ser leu leu thr val leu arg gly trp arg arg pro asp val arg val
361/121                              391/131
cgc ccc acc ggc ggc tgg cty ccc ggt gtg gaa atg gtt act gca acc gtc gcc cac att
arg pro thr ala ala ser leu pro gly val glu met val thr ala thr val ala his ile
421/141                              451/151
gac atc ggc gcc cag gta gtc cac acc gac aac agc gtc atc gcc tat gac ggc ttg gtg
asp ile ala ala gln val val his thr asp asn ser val ile gly tyr asp ala leu val
481/161                              511/171
atc gca tta ggt cgc ggc cty aac acc gac gcc gtt ccc gga cty tgg gac ggc ctc gac
ile ala leu gly ala ala leu asn thr asp ala val pro gly leu ser asp ala leu asp
541/181                              571/191
gac gac gtc ggc ggc cag ttc tac acc cty ccc ggc ggc gct gag cty agt ggc aag gtc
ala asp val ala gly gln phe tyr thr leu asp gly ala ala glu leu arg ala lys val
601/201                              631/211
gag ggc ctc gac cat ggc cgg atc gct gtg gct atc gcc ggg gtg cgg ttc aac tgc cca
glu ala leu gln his gly arg ile ala val ala ile ala gly val pro phe lys cys pro
661/221                              691/231
gcc gca cgg ttc gaa cgc ggc ttt cty atc gcc gcc caa ctc ggt gac cgc tac gcc acc
ala ala pro phe glu ala ala phe leu ile ala ala glu leu gly asp arg tyr ala thr
721/241                              751/251
gga acc gta cag atc gac acg ttc acg cct gac cgg atg cgg atg ccc gtt gca ggt gcc
gly thr val gln ile asp thr phe thr pro asp pro leu pro met pro val ala gly pro
781/261                              811/271
gag gtc gcc gag gct ttg gtc tgg atg ctc aag gat cac ggt gtc ggc ttc cac cct cgc
glu val gly glu ala leu val ser met leu lys asp his gly val gly phe his pro arg
841/281                              871/291
aag gcc cta ggt cgc gtc gat gag gcc gca agc agc atg cac ttc ggt gac ggc acg ttc
lys ala leu ala arg val asp glu ala ala arg thr met his phe gly asp gly thr ser

```

SEQ ID N° 48F

FIGURE 48F

FEUILLE DE REMPLACEMENT (RÈGLE 26)

165/185

```

901/301                               911/311
gaa cag ttc gat cag att gcc gtg gtc ccc ccc cac gcy ccc tcc gcc gag gcy cgg tca
glu pro phe asp leu leu ala val val pro pro his val pro ser ala ala ala arg ser
961/321                               991/331
ggg ggt ctc agc gaa tcc ggg tgg ata ccc gtg gac cgg cgc acc ctg tcc acc agc gcc
ala gly leu ser glu ser gly trp ile pro val asp pro arg thr leu ser thr ser ala
1021/341                               1051/351
gac aac gtg tgg gcc atc gcc gat gcy acc gtg ctg acc ctg ccc aat gcc asa cgg ctg
asp asn val trp ala ile gly asp ala thr val leu thr leu pro aan gly lys pro leu
1091/361                               1111/371
ccc aag gct gcc gtg ttc gcc gaa gcc cag gcc gca gta gtc gcc ccc gcc gtc gcc cgc
pro lys ala ala val phe ala glu ala gln ala ala val val ala his gly val ala arg
1141/381                               1171/391
cat ctc ggt tac gac gla gct gag cgc cac ttc acc gcc acc gcc gcc tgc tac gtc gag
his leu gly tyr asp val ala glu arg his phe thr gly thr gly ala cys tyr val glu
1201/401                               1231/411
acc ggt gat cac tag gca gcc aag gcc gac gcc gat ttc ttc gct cgg tog gcc ccc tog
thr gly asp his gln ala ala lys gly asp gly asp phe phe ala pro ser ala pro ser
1261/421                               1291/431
gtg acc ctg tac cgg cgg tog cgg gag ttr cat gag gag aag gtc gca ccc gaa ctg gcc
val thr leu tyr pro pro ser arg glu phe his glu glu lys val ala gln glu leu ala
1321/441
tgg ctg acc cgc tgg aag acc tga
trp leu thr arg trp lys thr CNA

```

SEQ ID N° 48F (suite)

FIGURE 48F (suite)

166/185

Fragment amplifié par PCR d'après les similarités de séquences avec une sérine protéase de la famille htrA de E. coli (création du site BamHI à l'extrémité 5' et du site SnaBI à l'extrémité 3') et sous-cloné dans le vecteur pJVED;

```

1/1 31/11
cca tcc aca ccc ctc aac acc cgg gcc aga cgc tgc cgg tgg tgg cgg cgg aga cgg cgg
pro ser thr pro leu asn ser arg ala arg arg cys arg ser val leu pro arg arg arg
61/21 91/31
tga tcc gtc cgc agt tgt tca tgt cgc gcc gca cca ccc ccc acc aac ggg tgc tgg cca
ofa ser val ala ser cys ser cys arg gly ala pro pro pro thr asn gly cys leu pro
121/41 151/51
tcc gtc tga cca acc gta gtt cgc cgc tgc tga tct cca aac gtc tca acc cca ccc aag cag
ser val ofa pro thr val val arg cys ofa ser pro lys val ser ser pro pro lys gln
181/61 211/71
tca tga aca acc tgc gtt ggg tgc tat tga tgc tgg tgg gga tgc ggg tgg cgg tgc ccc
ser ofa thr ser cys val gly cys tyr ofa ser trp val gly ser gly trp arg ser pro
241/81 271/91
cgg cgg ccc ggg gga tgg tca ccc ggg ccc gcc tga ggc cgg tgg gcc gcc tca ccc aag
ccg trp pro gly gly trp ser pro gly pro gly ofa gly arg trp ala ala ser pro lys
301/101 331/111
cgg cgg acc ggg tgg cgc gaa ccc acc acc tgc gcc cca tcc ccc tct tgc gca gcc acc
arg pro ser gly trp arg glu pro thr thr cys gly pro ser pro ser ser ala ala thr
361/121 391/131
aat tgg cca gcc tga cag agg cat tca att taa tgc tgc ggg ccc tgg ccc agt ccc cgg
asn trp pro gly ofa gln arg his ser ile ocn cys cys gly arg trp pro ser his gly
421/141 451/151
aac gcc agg cca gcc tgg tta ccc acc ccc gaa atg aat tgc gta ccc cgc taa cgt cgc
asn gly arg gln gly trp leu pro thr pro asp met asn cys val pro arg ocn arg arg
481/161 511/171
tgc gca cca atg tgc aac tct tga tgg cct cga tgg ccc cgg ggg ctc tgc gcc taa cca
cys ala pro met ser asn ser ofa trp pro arg trp pro arg gly leu arg gly tyr pro
541/181 571/191
acc agg aga tgg tgg acc tgc gtc cgc atg tcc tgg ctc aca tgc agg aat tgt cca ccc
ser arg arg trp ser thr cys val pro met cys trp leu lys ser arg asn cys pro his
601/201 631/211
tgg tag gcc att tgg tgg acc tgt ccc gag gcc atg ccc gag aag tgg tgc acc acc cgg
trp asp ala ile trp trp thr cys pro glu ala thr pro glu lys trp cys thr ser arg
661/221 691/231
tgc aca tgg cgc acc tgc tgc acc gca gcc tgg acc ggg tca ggc gcc gcc gca acc ata
ser thr trp leu thr ser ser thr ala ala trp ser gly ser gly gly ala thr ile
721/241 751/251
tcc ttt tgc acc tgc agg tga tgc gcc gcc ttt atg gcc ata ccc cgc gat tgc cgc
ser phe ser thr ser arg ofa leu gly gly arg phe met ala ile pro leu asp cys arg
781/261 811/271
gga tgg cgc tta acc tga tgg aca acc ccc cga agt gga gcc ccc cgg gcc gcc acc tgg
gly trp arg leu thr ofa trp thr thr pro arg ser gly ala arg arg ala ala thr trp
841/281 871/291
gtg tca gcc tga gcc acc tgc acc agt cgc acc acc agc tgg tgg ttt ccc acc gcc gcc
val ser gly ofa ala ser ser thr arg arg thr leu ser trp trp phe pro thr ala ala

```

SEQ ID N° 49A

FIGURE 49A

167/185

901/301
 cgg gaa ttc cgg tgc agg agc gcc gtc tgg tgt tgg aac ggt ttt acc ggt cgg cat cgg
 arg ala phe pro cys arg ser ala val trp cys leu asn gly phe thr gly arg his arg
 961/321
 ccc ggg cgt tgc cgg gtt cgg gcc tgg ggt tgg cga tgc tca aac agg tgg tgc tca acc
 his gly arg cys arg val arg ala ser gly trp arg ser ser asn arg trp cys ser thr
 1021/341
 acc ggg gat tgc tgc gca tgc aag aca cgg acc cag cgg gcc agc ccc cgg gaa agt cga
 thr ala asp cys cys ala ser lys thr pro thr gln ala ala ser pro leu glu arg arg
 1081/361
 ttt aag tgc tgc tcc cgg gcc gtc gga tgc cga ttc cgc agc ttc cgg tgc cga cgg ctc
 phe thr cys cys ser pro ala val gly cys arg phe arg ser phe pro val arg arg leu
 1141/381
 cgg ctc gga gca cgg aca tgc aga act ctc ggg gtt cgg cga cgg tta tct cag tgg aat
 ala leu gly ala arg thr ser arg thr leu gly val arg arg thr leu ser gln trp asn
 1201/401
 ctc agt cca cgc cgg caa cct agt tgc gca gtt act gtt gaa agc ccc acc cat gcc agt
 leu ser pro arg ala gln pro ser cys ala val thr val glu ser his thr his ala ser
 1261/421
 cca cgc atg gcc aag tgc gcc cga gta gtc ggc cta gta cag gaa gag caa cct agc gcc
 pro arg met ala lys leu ala arg val val gly leu val gln glu gln pro ser asp
 1321/441
 atg acc aat cac cca cgg tat tgc cca cgg cag cag cag ggc cta gta cag gaa gag caa cct agc gcc
 met thr asn his pro arg tyr ser pro pro pro gln gln pro gly thr pro gly tyr ala
 1381/461
 cag ggg cag cag caa acc tac agc cag cag ttc gac tgg cgt tac cca cgg tcc cgg ccc
 gln gly gln gln gln thr tyr ser gln gln phe asp trp arg tyr pro pro ser pro pro
 1441/481
 cgg cag cca acc cag tac cgt cca ccc tac gag cgg tgg ggt ggt acc cgg cgg ggt ctc
 pro gln pro thr gln tyr arg gln pro tyr glu ala leu gly gly thr arg pro gly leu
 1501/501
 ata cct ggc gtc att cgg acc atg acc ccc cct cct ggg arg gtt cgc caa cgc cct cgc
 ile pro gly val ile pro thr met thr pro pro pro gly met val arg gln arg pro arg
 1561/521
 gca ggc atg ttg gcc atc gcc ggg gtc acc avs cgg gtc gtc tcc gcc gcc atc ggc gcc
 ala gly met leu ala ile gly ala val thr ile ala val val ser ala gly ile gly gly
 1621/541
 cgg gcc gca tcc ctc gtc gcc ttc aac cgg gca ccc gcc gcc ccc agc gcc gcc cca gtc
 ala ala ala ser leu val gly phe asn arg ala pro ala gly pro ser gly gly pro val
 1681/561
 gct gcc agc cgg gcc cca agc atc ccc gca gca aac atg cgg cgg ggg tgc gaa cag
 ala ala ser ala ala pro ser ile pro ala ala asn met pro pro gly ser val glu gln
 1741/581
 ggg cgg gcc aag gtc gtc ccc agt gcc gtc atg ttg gaa acc gat ctc gcc cgc cag tgc
 val ala ala lys val val pro ser val val met leu glu thr asp leu gly arg gln ser
 1801/601
 gag gag gcc tcc gcc atc att arg tct gcc gag ggg atg atc ttg acc aac aac csc gtc
 glu glu gly ser gly ile ile leu ser ala glu gly leu ala leu thr asn asn his val
 1861/621
 atc gcc cgg gcc gcc aag cct ccc atg gcc agt cgg cgg cgg aac acc cgg gta
 ile ala ala ala ala lys pro pro leu gly ser pro pro pro lys thr thr val

SEQ ID N° 49A (suite 1)

FIGURE 49A (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

168/185

1/1
 cat cta cac cgc tca aca gcc ggg cca gac gct gcc ggt cgg tgc tgc cga gaa ggc ggt
 his leu his arg ser thr ala gly pro asp ala ala gly arg cys cys arg glu gly gly
 61/21
 gat cgg tgg cga gtt gtt cat gtc ggc ggc cac cac cgc cga cca acg ggt gct tgc cat
 asp pro trp arg val val his val ala ala his his acg arg pro thr gly ala cys his
 121/41
 cgg tct gac caa cgg tag ttc gct gct gat ctc caa aag tct caa gcc cac cga agc agt
 pro ser asp gln arg amh phe ala ala asp leu gln lys ser gln ala his arg ser ser
 181/61
 cat gaa caa gcc ggc ttg ggt gct att gat cgt ggg tgg gat cgg ggt gcc ggt cgc cgc
 his glu gln ala ala leu gly ala ile asp arg gly trp asp arg gly gly gly arg arg
 241/81
 ggt gcc cgg ggg gat ggt cac cgg ggc cgg gct gag gcc ggt ggg cgg cct cac cga agc
 gly gly arg gly asp gly his pro gly arg ala glu ala gly gly pro pro his arg ser
 301/101
 gcc cga cgg ggt gcc ggc aac cga cga cct ggc gcc cat ccc cgt ctt cgg cag cga cga
 gly arg ala gly gly ala aen arg arg pro ala ala his pro arg leu arg gln arg arg
 361/121
 att gcc cag gct gac aga gcc att caa ttt aat gct ggc ggc gct ggc cga gtc acg gga
 ile gly gln ala asp arg gly ile gln phe aen ala ala gly ala gly arg val thr gly
 421/141
 acg gca gcc aag gct ggt tac cga cgc cgg aca tga att ggc tac ccc gcc aac gtc gct
 thr ala gly lys ala gly tyr arg arg arg thr opa ile ala tyr pro ala aen val ala
 481/161
 gcc cac caa tgt cga act ctt gat gcc ctc gat gcc ccc ggg gcc tcc gcc gct acc caa
 ala his gln cys arg thr leu asp gly leu asp gly pro gly gly ser ala ala thr gln
 541/181
 gca gga gat ggt cga cct ggc tgc cga tgt gct gcc tca aat cga gga att gtc cac acr
 ala gly asp gly arg pro ala cys arg cys ala gly ser aen arg gly ile val his thr
 601/201
 ggt agg cga tct ggt gga cct gtc cgg agg cga ccc cgg aga agt ggt gca cga gcc ggt
 gly arg arg phe gly gly pro val pro arg arg arg arg arg ser gly ala arg ala gly
 661/221
 cga cat gcc tga cgt cgt cga cgg cag cct gga gcy ggt cag gcg gcg gcc caa cga tat
 arg his gly opa arg arg arg pro gln pro gly ala gly gln ala ala ala gln arg tyr
 721/241
 cct ttt cga cgt cga ggt gat tgg gtc gca ggt tta tgg cga tac cgc tgg att gtc ggc
 pro phe arg arg arg gly asp trp val ala gly leu trp arg tyr arg trp ile val ala
 781/261
 gct gcc gct taa cct gat gga caa cgc cgc gaa gtc gag ccc gcc ggg cgg cca cgt ggg
 asp gly ala och pro asp gly gln arg arg glu val glu pro ala gly arg pro arg gly
 841/281
 tgg cag gct gag cca gct cga cgc gtc gca cgc tga gct gcc ggt ttc cga cgc cgg ccc
 cys gln ala glu pro ala arg arg val ala arg opa ala gly gly phe arg pro arg pro
 901/301
 ggg cat taa cgt gca gga ggc cgg tct ggt gtt tga arg gtt tta cgg gtc ggc atc ggc
 gly his ser arg ala gly ala pro ser gly val opa thr val leu pro val gly ile gly
 961/321
 acg gcc gtc gcc ggg ttc ggc ccc cgg gtt ggc gat cgt caa aca ggt ggt gct caa cca
 thr gly val ala gly phe gly pro arg val gly asp arg gln thr gly gly ala gln pro
 1021/341
 cgg cgg att gct ggc cat cga aga ccc cga ccc agc cgg cca gcc ccc tgg aac gtc gat
 arg arg ile ala ala his arg arg his arg pro arg arg pro ala pro trp aen val asp

SEQ ID N° 49B

FEUILLE DE REMPLACEMENT (REGLE 26)

169/185

1081/361 1111/371
 tta cgt gct gct ccc cgg cag tgc gat gcc gat tcc gaa gct tcc cgg tgc gac gcc tgg
 leu arg ala ala pro arg pro ser asp ala asp ser ala ala ser arg cys asp gly trp
 1141/381 1171/391
 cgc tgc gag ccc gga cat cga gaa ctc tgc ggg ttc gcc gaa cgt tat ctc agt gga atc
 arg ser glu his gly his arg glu leu ser gly phe gly glu arg tyr leu ser gly ile
 1201/401 1231/411
 tca gtc cac cgc cgc aac cta gtt gtg cag tta cgc ttg aaa gcc aca ccc arg cca gtc
 ser val his ala arg asn leu val val gln leu leu leu lys ala thr pro met pro val
 1261/421 1291/431
 cac gca tgg cca agt tgg ccc gag tag tgg gcc tgc tcc cgc aag gcc aac cta cgc aca
 his ala trp pro ser trp pro glu amh trp ala amh tyr arg lys ser asn leu ala thr
 1321/441 1351/451
 tga cga atc acc cac ggt att cgc cac cgc cgc agt agc cgc gaa ccc cag gtc atp ctc
 oPa arg ile thr his gly ile arg his arg arg ser ser arg glu pro gln val met leu
 1381/461 1411/471
 agg gcc agc agc aaa cgt aca gcc agc agt tgc acc gcc gtt acc cac cgt ccc cgc ccc
 arg gly ser ser lys arg thr ala ser ser ser thr gly val thr his arg pro arg pro
 1441/481 1471/491
 cgc agc cca ccc agt acc gtc aac cct acg agg cgc tgg tgg gta ccc gcc cag gtc tgc
 arg ser gln pro ser thr val asn pro thr arg arg trp val val pro gly arg val oPa
 1501/501 1531/511
 tac ctg cgc tga ttc cga cca tga cgc ccc ctc cgc gaa tgg ttc gcc aac gcc ctc gtc
 tyr leu ala oPa phe arg pro oPa arg pro leu leu gly trp phe ala asn ala leu val
 1561/521 1591/531
 cag gca tgt tgg cca tgc cgc cgc tga cgc tgc tgg tgg tgt cag cgc gca tag gcc gag
 gla ala cys trp pro ser ala arg oPa arg amh arg trp cys pro pro ala ser ala ala
 1621/541 1651/551
 cgc cgc cat ccc tgg tgc ggt tca acc ggc cac cgc gcc ccc cca gag cgc gcc cag tgg
 arg pro his pro trp ser gly ser thr gly his pro pro ala pro ala ala ala gln trp
 1681/561 1711/571
 ctg cca cgc cgc cgc cca gca tcc cgc cgc cca cca tgc cgc cgc ggt cgc tgc aac agc
 leu pro ala arg arg glc ala ser pro gln gln thr cys arg arg gly arg ser asn arg
 1741/581 1771/591
 tgg cgc cca agt tgg tgc cca gtc tgc tca tgt tgc aaa ccc acc tgg gcc gcc agt cgc
 trp arg pro arg ttp cys pro val ser ser cys trp lys pro ile trp ala ala ser arg
 1801/601 1831/611
 agg agc gct cgc gca tca thr tgt ctg cgc agg gcc tga tct tga cca aca acc cgc tga
 arg arg ala pro ala ser phe cys leu pro arg gly oPa ser oPa pro thr thr thr oPa
 1861/621 1891/631
 tgc cgc cgc cgc cca agc ctc ccc tgg gca gtc cgc cgc cga aaa cga cgc ta
 ser arg arg pro pro ser leu pro trp ala val arg arg arg lys arg arg

SEQ ID N° 49B (suite 1)

FIGURE 49B (suite 1)

170/185

1/1 31/11
 atc tac aac gct caa caa cgg ggc cag aac atg ccg gtc ggt gct gcc gag aag ggc gtc
 ile tyr thr ala gln gln pro gly gln thr leu pro val gly ala ala glu lys ala val
 61/21 91/31
 acc cgt gcc gag tgg ttc atg tgg cgg cgc acc acc gcc gac caa cgg gtc att gcc atc
 ile arg gly glu leu phe met ser arg arg ttc thr ala asp gln arg val leu ala ile
 121/41 151/51
 cgt ctg acc aac ggt agt tgg ctg ctg atc tcc aas agt ctg aag ccc acc gaa gca gtc
 arg leu thr asn gly ser ser leu leu ile ser lys ser leu lys pro thr glu ala val
 181/61 211/71
 atg aac aag ctg cgt tgg gtc cta ttg atc gtc ggt agt atc ggg ctg ggc gtc gac ggc
 met asn lys leu arg trp val leu leu ile val gly gly ala gly val ala val ala ala
 241/81 271/91
 gtc gcc ggg ggc atg gtc acc cgg gcc ggc ctg agg cgg gtc gcc cgc ctg acc gaa ggc
 val ala gly gly met val thr arg ala gly leu arg pro val gly arg leu thr glu ala
 301/101 331/111
 gcc ggc cgg gtc ggc cga acc gac gac ctg cgg ccc atc ccc gtc ttc ggc agc gac gaa
 ala glu arg val ala arg thr asp asp leu atg pro ile pro val phe gly ser asp glu
 361/121 391/131
 ttg gcc agg ctg aca gag gca ttc aat tta atg ctg cgg ggc ctg gcc gag tca cgg gaa
 leu ala arg leu thr glu ala phe asn leu met leu arg ala leu ala gly ser arg glu
 421/141 451/151
 cgg cag gca agg ctg ggt acc gac gcc gga cat gaa ttg cgt acc ccg cta acg tgg ctg
 arg gln ala arg leu val thr asp ala gly his glu leu arg thr pro leu thr ser leu
 481/161 511/171
 cgc acc aat gtc gaa ctg ttg atg gcc tgg atg gcc cgg ggg gct ccg cgg cta ccc aag
 arg thr asn val glu leu leu met ala ser met ala pro gly ala pro arg leu pro lys
 541/181 571/191
 cag gag atg gtc gac cgg cgt gcc gat gtc ctg gcc caa aaq gag gaa ttg tcc aca ctg
 gln glu met val asp leu arg ala asp val leu ala gln ile glu glu leu ser thr leu
 601/201 631/211
 gta ggc gat ttg gtc gac ctg tcc cga gcc gac gcc gga gaa gtc gtc cag gag ccg gtc
 val gly asp leu val asp leu ser arg gly asp ala gly glu val val his gln pro val
 661/221 691/231
 gac atg gcc gac gtc gtc gac cgc agc ctg gag cgg gtc agg cgg tgg cgc aac gat atc
 asp met ala asp val val asp arg ser leu glu arg val arg arg arg arg asn asp ile
 721/241 751/251
 cct ttc gac gtc gag gtc att ggg tgg cag gtt tat gcc gac acc gct gga ttg tgg cgg
 leu phe asp val glu val ile gly trp gln val tyr gly asp thr ala gly leu ser arg
 781/261 811/271
 atg ggc att aac ctg atg gac aac gcc ggc aag tgg agc ccg ccg ggt gcc cag gtc ggt
 met ala leu asn leu met asp asn ala ala lys trp ser pro pro gly gly his val gly
 841/281 871/291
 gtc agt ctg agc cag ctg gac ggc tgg cag gcc gag ctg gtc gtt tcc gac cgc gcc ccg
 val arg leu ser gln leu asp ala ser his ala gla leu val val ser asp arg gly pro
 901/301 931/311
 ggc att ccc gtc cag gag cgc cgt ctg gtc ttc gaa cgg ttt tac cgg tgg gca tgg gca
 gly ile pro val gln glu arg leu val phe glu arg phe tyr arg ser ala ser ala
 961/321 991/331
 cgg gtc ttg ccg ggt tgg gcc ctg ggg ttg ggc att gtc aas cag ggc gtc ctg aac cag
 arg ala leu pro gly ser gly leu gly leu ala ile val lys gln val val leu asn his

SEQ ID N° 49C

FIGURE 49C
 FEUILLE DE REMPLACEMENT (REGLE 26)

171/185

1021/341
 ggc gga ttg ctg cgc atc gaa gac acc gac cca ggc ggc cag ccc cct gga acg tgc att
 gly gly leu leu arg ile glu asp thr asp pro gly gly gln pro pro gly thr ser ile
 1081/361
 tac gtg cgc ctc ccc ggc cgt cgg atg cgc att cgc cag ctt ccc ggt ggc acg gct ggc
 tyr val leu leu pro gly arg arg met pro ile pro gln leu pro gly ala thr ala gly
 1141/381
 gct cgg agc aag gac atc gag aac tct cgg ggt tgc ggc aac gtt atc tca gty gaa tct
 ala arg ser thr asp ile glu asn ser arg gly ser ala asn val ile ser val glu ser
 1201/401
 cag tcc acg cgc gca acc tag ttg tgc agt tac tgt tga aag cca ccc cca tgc dag tcc
 gln ser thr arg ala thr AMB leu cys ser tyr cys CPA lys pro his pro cys gln ser
 1261/421
 acg cat ggc caa gtt ggc cgc agt agt ggc cct agt aca gga aga gca acc tag cga cat
 thr his gly gln val gly pro ser ser gly pro ser thr gly arg ala thr AMB arg his
 1321/441
 gac gaa tca ccc aag gta ttc gcc acc gcc gca gca gcc ggc aac ccc aag tta tgc tca
 asp glu ser pro thr val phe ala thr ala ala ala ala gly asn pro arg leu cys ser
 1381/461
 ggc gca gcc gca aac gta cag cca gca gtt cga ctg ggc tta ccc acc gtc acc gcc acc
 gly ala ala ala asn val gln pro ala val arg leu ala leu pro thr val pro ala pro
 1441/481
 gca gcc aac cca gta cgc tca acc cta cga ggc gtt ggc tgg tac cgc gcc ggc tct gat
 ala ala asn pro val pro ser thr leu arg gly val gly trp tyr pro ala gly ser asp
 1501/501
 acc tgg cgt gat tcc gac cat gac gcc ccc tcc tgg gat ggt tgc cca acc ccc tgc tgc
 thr trp arg asp ser asp his asp ala pro ser trp asp gly ser pro thr pro ser cys
 1561/521
 agc cat ggt ggc cat cgc cgc ggt gac gat agc ggt ggt gtc cgc cgc cat cgc cgc cgc
 arg his val gly his arg arg gly asp asp ser gly gly val arg arg his arg arg arg
 1621/541
 ggc cgc atc cct ggt cgc gtt caa cgc gcc acc cgc cgc ccc cag cga cgc acc agt ggc
 gly arg ile pro gly arg val gln pro gly thr arg arg pro gln arg arg pro ser gly
 1681/561
 tgc cag cgc ggc gcc aag cag ccc cgc agc aaa cat gcc gcc ggc gtc ggt cga aca ggt
 cys gln arg gly ala lys his pro arg ser lys his ala ala gly val gly arg thr gly
 1741/581
 ggc ggc caa ggt ggt gcc cag tgt cgt cat gtt gga acc cga tct ggc cgc cca gtc gga
 gly gly gln gly gly ala gln cys arg his val gly asn arg ser gly pro val gly
 1801/601
 gga ggc ctc cgc cat cat tct gtc tgc cgc ggc gct gat ctt gac caa caa cca cgt gat
 gly gly leu arg his his ser val cys arg gly ala asp leu asp gln gln pro arg asp
 1861/621
 cgc ggc ggc tgc aac gcc tcc cct ggc cgc tcc gcc gcc gaa aac gac ggt a
 arg gly gly arg gln ala ser pro gly gln ser ala ala glu asn asp gly

SEQ ID N° 49C (suite 1)

FIGURE 49C (suite 1)

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Séquence codante Rv0383 prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq60A:

```

1/1                               31/11
atg gcc aag ttg gcc cga gta gtg ggc cta gta cag gaa gag caa cct agc gac atg acg
Met ala lys leu ala arg val val gly leu val gln glu glu pro ser asp met thr
61/21                               91/31
aat cac cca cgg tat tgg cca cag cgg cag cag cgg gga acc cca ggt tat gct cag ggg
asn his pro arg tyr ser pro pro gln gln pro gly thr pro gly tyr ala gln gly
121/41                               151/51
cag cag caa acg tac agc cag cag ttc gac tgg cgt tac cca cgg tcc cgg acc cgg cag
gln gln gln thr tyr ser gln gln phe asp tgp arg tyr pro pro ser pro pro pro gln
181/61                               211/71
cca acc cag tac cgt caa ccc tac gag cgt ttg ggt ggt acc cgg cgg ggt ctg ata cct
pro thr gln tyr arg gln pro tyr glu ala leu gly gly thr arg pro gly leu ile pro
241/81                               271/91
ggc gtg att cgg acc atg acg ccc cct cct ggg atg gtt agc caa cgc cct cgt gca ggc
gly val ile pro thr met thr pro pro pro gly met val arg gln arg pro arg ala gly
301/101                              331/111
atg ttg gcc atc gcc ggc gtg acg ata gcc gtg gtg tcc gcc gcc atc gcc gcc gcc gcc
met leu ala ile gly ala val thr ile ala val val ser ala gly ile gly gly ala ala
361/121                              391/131
gca tcc ctg gtc ggg ttc aac cgg gca ccc gcc ggc ccc agc gac gcc sca gtg gct gcc
ala ser leu val gly phe asn arg ala pro ala gly pro ser gly gly pro val ala ala
421/141                              451/151
agc cgg gcc cca ago atc ccc gca gca aac atg cgg cgg ggg tgg gtc gaa cag gtg gcc
ser ala ala pro ser ile pro ala ala asn met pro pro gly ser val glu gln val ala
481/161                              511/171
gcc aag gtg ggc ccc agt gtc gtc atg ttg gaa acc gat cgg gcc cgc cag tgg gag gag
ala lys val val pro ser val val met leu glu thr asp leu gly atg gln ser glu glu
541/181                              571/191
ggc tcc gcc atc att ctg tct gcc gag ggg atg atc atg acc aac aac cac gtg atc gcc
gly ser gly ile ile leu ser ala glu gly leu ile leu thr asn asn his val ile ala
601/201                              631/211
gcc gcc gcc aag cct ccc ctg gcc agt cgg cgg cgg aaa acg acg gta acc ttc tat gac
ala ala ala lys pro pro leu gly ser pro pro pro lys thr thr val thr phe ser asp
661/221                              691/231
ggg cgg acc gca ccc tta acg gtg gtg ggg gct gac ccc acc agt gat atc gcc gtc gtc
gly arg thr ala pro phe thr val val gly ala asp pro thr ser asp ile ala val val
721/241                              751/251
cgt gtt cag gcc gtc tcc ggg atc acc cgg atc tcc ctg ggt tcc tcc tgg gac ctg agg
arg val gln gly val ser gly leu thr pro ile ser leu gly ser ser ser asp leu arg
781/261                              811/271
gtc ggt cag cgg gtg ctg gcc atc ggg tgg cgg atc ggt atg gag ggc acc gtg acc acg
val gly gln pro val leu ala ile gly ser pro leu gly leu glu gly thr val thr thr

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SEQ ID N° 49D

FIGURE 49D

173/185

841/281 871/291
 ggg atc gtc agc gct ctc aac ggt cca gtc tcc acg acc ggc gag gcc ggc aac cag aac
 gly ile val ser ala leu asn arg pro val ser thr thr gly glu ala gly asn gln asn
 901/301 931/311
 acc gtg ctg gac gcc att cag acc gac gcc ggc atc aac ccc ggt aac tcc ggg gac ggc
 thr val leu asp ala ile gln thr asp ala ala ile asn pro gly asn ser gly gly ala
 961/321 991/331
 ctg gtg aac atg aac gct caa ctc gtc gga gtc aac tgg gcc att gcc acg ctg ggc ggc
 leu val asn met asn ala gln leu val gly val asn ser ala ile ala thr leu gly ala
 1021/341 1051/351
 gac tca gcc gat gcg cag acc ggc tgg atc ggt ctc ggt ttt gcc att cca gtc gac cag
 asp ser ala asp ala gln ser gly ser ile gly leu gly phe ala ile pro val asp gln
 1091/361 1111/371
 gcc aag cgc atc gcc gac gag ttg atc agc acc ggc aag gcg tca cat gcc tcc ctg ggt
 ala lys arg ile ala asp glu leu ile ser thr gly lys ala ser his ala ser leu gly
 1141/381 1171/391
 gtg cag gtg acc aat gac aaa gac acc ctg ggc gcc aag atc gtc gaa gta gtc gcc ggt
 val gln val thr asn asp lys asp thr leu gly ala lys ile val gln val val ala gly
 1201/401 1231/411
 ggt gct gcc gcg aac gct gga gtg ccg aag ggc gtc ggt gtc acc aag gtc gac gac cgc
 gly ala ala ala asn ala gly val pro lys gly val val val thr lys val asp asp arg
 1261/421 1291/431
 ccg atc aac agc gcg gac gcg ttg gtt gcc gcc gtg cgg tcc aaa gcg ccg ggc gcc acc
 pro ile asn ser ala asp ala leu val ala ala val arg ser lys ala pro gly ala thr
 1321/441 1351/451
 gtg gcg cta acc ttt cag gat ccc tgg gcc ggt agc cgc aca gtc caa gtc acc ctc ggc
 val ala leu thr phe gln asp pro ser gly ser arg thr val gln val thr leu gly
 1381/461
 aag gcg gcg cag tga
 lys ala glu gln opa

SEQ ID N° 49D (suite 1)

FIGURE 49D (suite 1)

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ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv0983

1/1 21/11
 tga gcc agc tgg acg cgt cgc acg cgg agc tgg tgg ttt cgc acc gag gcc cgg gca ttc
 oPa ala ser ser thr arg arg thr leu ser trp trp phe pro thr ala ala arg ala phe
 61/21 91/31
 ccg tgc agg agc gcc gtc tgg tgt ttg aac ggt tut acc ggt cgg cat cgg ccc ggg cgt
 pro cys arg ser ala val trp cys leu asn gly phe thr gly arg his arg his gly arg
 121/41 151/51
 tgc cgg gtt cgg gcc tgg ggt tgg cga tgg tca aac agg tgg tgc tca acc acg ggg gat
 cys arg val arg ala ser gly trp arg ser ser asn arg trp cys ser thr thr ala asp
 181/61 211/71
 tgc tgc gca tgg aag cca cgc acc cag ggc gcc agc ccc cgg gaa cgt cga ttt acc tgc
 cys cys ala ser lys thr pro thr gln ala ala ser pro leu glu arg arg phe thr cys
 241/81 271/91
 tgc tcc cgg gcc gtc gga tgc cga ttc cgc agc ttc cgg gtg cga cgg cgg gcc ctc gga
 cys ser pro ala val gly cys arg phe arg ser phe pro val arg arg tcc ala leu gly
 301/101 331/111
 gca cgg aca tgg aga act ctc ggg gtt cgg cga cgc tta tcc cgg tgg aat ctc agt cca
 ala arg thr ser arg thr leu gly val arg arg thr leu ser gln trp asn leu ser pro
 361/121 391/131
 cgc gcc caa cct agt tgt gca gtt act gtt gaa agc cac acc cat gcc agt cca cgt atg
 arg ala gln pro ser cys ala val thr val glu ser his thr his ala ser pro arg met
 421/141 451/151
 gcc aag ttg gcc cga gta gtg gcc cta gta cag gaa gag caa ccc agc gac atg acc aat
 ala lys leu ala arg val val gly leu val gln glu glu gln pro ser asp met thr asn
 481/161 511/171
 cac cca cgg tat tgg cca cgc cgc cag cag cgg cga acc cca ggt tat gct cag ggg cag
 his pro arg tyr ser pro pro pro gln gln pro gly thr pro gly tyr ala gln gly gln
 541/181 571/191
 cag caa acc tac agc cag cag ttc gac tgg cgt tac cca cgc tcc cgg ccc cgc cag cca
 gln gln thr tyr ser gln gln phe asp trp arg tyr pro pro ser pro pro pro gln pro
 601/201 631/211
 acc cag tac cgt cca ccc tac gag ggc ttg ggt ggt acc cgg cgg ggc ctt ata cct gcc
 thr gln tyr arg gln pro tyr glu ala leu gly gly thr arg pro gly leu ile pro gly
 661/221 691/231
 gtg att cgc acc atg acg ccc cct cct ggg atg gtt cgc caa cgc cct cgt gaa gcc arg
 val ile pro thr met thr pro pro pro gly met val arg gln arg pro arg ala gly met
 721/241 751/251
 ttg gcc atc gcc gcc ggg aag ata gcc ggg gtc gtc tcc gcc gcc acc gcc gcc gcc gca
 leu ala ile gly ala val thr ile ala val val ser ala gly ile gly gly ala ala ala
 781/261 811/271
 tcc cgg gtc ggg ttc aac cgg gca ccc gcc gcc ccc agc gcc gcc cca ggg gct gcc agc
 ser leu val gly phe asn arg ala pro ala gly pro ser gly gly pro val ala ala ser
 841/281 871/291
 cgg gcc ccc agc atc ccc gca gca aac atg cgg cgc ggc tgg ttc gaa cag ggg gcc gcc
 ala ala pro ser ile pro ala ala asn met pro pro gly ser val glu gln val ala ala

SEQ ID N° 49F

FIGURE 49F

175/185

901/301 931/311
 aag gtg gtg ccc agt gtc gtc atg ttg gaa acc gat atg ggc cgc cag tgg gag gag ggc
 lys val val pro ser val val met leu glu thr asp leu gly arg gln ser glu glu gly
 981/321 991/331
 tcc ggc atc att ctg tct gcc gag ggg ctg atc ttg acc aac aac cgc gtg atc gcg ggc
 ser gly ile ile leu ser ala glu gly leu ile leu thr asn asn his val ile ala ala
 1021/341 1051/351
 gcc gcc aag cct ccc ctg gcc agt cgg cgg ccg aaa acg acg gtc acc ttc tct gac ggg
 ala ala lys pro pro leu gly ser pro pro pro lys thr thr val thr phe ser asp gly
 1081/361 1111/371
 cgg acc gca ccc ttc aag gtg gtg ggg gct gac ccc acc agt gat acg gcc gtc gtc cgt
 arg thr ala pro phe thr val val gly ala asp pro thr ser asp ile ala val val arg
 1141/381 1171/391
 gtt cag ggc gtc tcc ggg ctc acc cgg atc tcc ctg ggt tcc tcc tog gac ctg agg gtc
 val gln gly val ser gly leu thr pro ile ser leu gly ser ser ser asp leu arg val
 1201/401 1231/411
 ggt acc cgg gtg ctg ggg atc ggg tgg cgg ctc ggt ttg gag ggc acc gtc acc acg ggg
 gly gln pro val leu ala ile gly ser pro leu gly leu glu gly thr val thr thr gly
 1261/421 1291/431
 atc gtc agc gct ctc aac cgt cca gtc tog acc acc ggc gag gcc gcc aac cag aac acc
 ile val ser ala leu asn arg pro val ser thr thr gly glu ala gly asn gln asn thr
 1321/441 1351/451
 gtg ctg gac gcc att cag acc gac gcc gag atc aac ccc ggt aac tcc ggg gcc ggc ctg
 val leu asp ala ile gln thr asp ala ala ile asn pro gly asn ser gly gly ala leu
 1381/461 1411/471
 gtg aac atg aac gct cca ctc gtc gga gtc aac tog gcc att gcc aag ctg gcc gag
 val asn met asn ala gln leu val gly val asn ser ala ile ala thr leu gly ala asp
 1441/481 1471/491
 tca gcc gat gcg cag agc gcc tog atc ggt ctc ggt ttc gcc att cca gtc gac cag gcc
 ser ala asp ala gln ser gly ser ile gly leu gly phe ala ile pro val asp gln ala
 1501/501 1531/511
 aag cgc atc gcc gac gag ttg atc agc acc ggc aag gcg tca cat gcc tcc ctg ggt gtc
 lys arg ile ala asp glu leu ile ser thr gly lys ala ser his ala ser leu gly val
 1561/521 1591/531
 cag gtg acc aat gac aaa gac acc ctg gcc gcc aag atc gtc gaa gta gtc gcc ggc ggt
 gln val thr asn asp lys asp thr leu gly ala lys ile val glu val val ala gly gly
 1621/541 1651/551
 gct gcc gcg aac gct gga gtg cgg aag gcc gtc gtt gtc acc aag gtc gac gac cgc cgg
 ala ala ala asn ala gly val pro lys gly val val val thr lys val asp asp arg pro
 1681/561 1711/571
 atc aac agc gcg gar ggg ttg gtt gcc gcc gtg cgg tcc aaa gcg cgg gcc gcc acc ggc
 ile asn ser ala asp ala leu val ala ala val arg aaf lys ala pro gly ala thr val
 1741/581 1771/591
 gcg cta acc ttt cag gat ccc tog gcc ggt agt cgc aca gtc cca gtc acc ctc gcc aag
 ala leu thr phe gln asp pro ser gly gly ser arg thr val gln val thr leu gly lys
 1801/601
 gcg gag cag tgg
 ala glu gln opa

SEQ ID N° 49F (suite 1)

FIGURE 49F (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

176/185

Fragment amplifié par PCR d'après les similarités de séquence avec une sérine protéase de la famille HtrA de *E. coli* (création du site SnaBI à l'extrémité 3') et sous cloné dans le vecteur pGEX2a:

```

1/1 11/11
gat ccc ggg ggg ggg ggg tgg tgg ggg ggg ggg tgg ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg
asp pro ala gly arg val ser ala gln ala trp leu ala val thr ala val arg ala val
61/71 91/31
ggg ccc ggg tgt ggg ggg ccc ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg
pro pro gly cys gly ala pro ala ala ala val ala ser ala gly thr ala pro ser pro
121/41 151/51
aca tgg tca ggg ggt gag aag gtg gcc tgg ggg ggg ccc ggg ggg ggg ggg ggg ggg ggg ggg ggg
thr ser ser ala val glu thr val ala ser ala val pro val ala val ala asp gly ser
181/61 211/71
acc ggg aag ccc ggg ccc ggg gac aag ggg gac aag ggg gaa tgg gcc tgg ggg ggg ggg ggg
thr ala thr ala gly pro ala asp thr ala asp lys ala gln ser ala ser ala ala ala
241/81 271/91
ccc ggg ggg aag ggg gcc aag ggg ggg ccc gcc ggg gac tgt ggg gta cgg ggg ggg ccc
pro ala ala thr gly ala arg ala ala pro ala ala ala asp cys gly val leu ala ala pro
301/101 331/111
ggg gac acc ggg ggg aag ggg ggg gta ccc ggg ggg gcc ccc ggg gcc ccc ggg ggg ggg ggg ggg
ala asp thr ala gly lys ala val val pro gly ala his arg cys pro val arg gln ala
361/121 391/131
tgg ggg ccc cgg gtt ggg ccc ggg ggg tga tgg gaa acc ggg ggg ccc ggg ggg ggg ggg ggg
trp ala pro arg val ala pro val gly gaa ser ala thr ala gly pro ala thr ala
421/141 451/151
gtg tgg ggg cgt ccc ggg ggg tgg ccc gag tag ggg gtt ccc ggg gaa acc gaa tgg cga
val ser ala arg pro ala gly ser pro glu xbb ala val pro ala gly thr pro cys gaa
481/161 511/171
tgg ggg acc ggg ggg ccc ggg ggg ccc ggg gag aca gaa gtt tgg gta atg ggg ggg ccc
ser gly thr ala ala pro ala ala pro ala glu thr ala val ser leu met ala arg pro
541/181 571/191
ggg ggg ccc ggg gtt ccc gag ggc acc ttt tgg gaa atg ggg ggt ccc ggg gcc acc ggg
ala ala arg ala val pro glu gly thr ser ser ala met ala gly pro ala ala thr ala
601/201 631/211
gag ccc tca cgg ccc gaa acc ccc gta tgg gtt ggg ccc ggg ggg tgg gtt ggg acc cca
glu pro ser arg pro ala thr pro val ser val ala pro ala ala ser val gly thr pro
661/221 691/231
ggc tga tgg gcc acc gtt ggg ccc ggg gtt ccc ggg ggg acc ggg ccc gag ctt tgg ttt
gly gaa ser ala thr val ala pro ala val pro ala gly thr ala pro glu pro trp leu
721/241 751/251
gac gtt acc ggg ggg ccc gtt gga acc ggg ggg gtt ggg gcc acc ttt acc gaa acc ggg
ala val thr ala gly pro val gly thr gly ala leu ala ala ser tyr thr ala thr ala
781/261 811/271
ggc acc ggg gcc ccc gaa ccc ggg gaa cac tgc aag cgg cgg tga ggt ggt tgg tgg cgg
ala thr ala pro pro ala pro ala glu his cys arg arg arg gaa ala asp trp gaa arg
841/281 871/291
att tgt tgg gtt cac ccc gcc aac ccc ggg aca ccc gcc acc ccc gcc gcc ccc gat gaa
leu cys ser val his pro ala asp pro ala leu thr pro ala asp pro asp gln
901/301 931/311
gga ggg ttt cgg tgg tgg tgg gaa tgg cca tcc ggt gag tgg ggg acc tgg acc acc
arg gly phe arg cys arg ser gly ala trp pro ser ala glu leu ala ile trp thr thr
961/321 991/331
tgg gtt tag aca aat ccc gcc gcc cgg acc att aag ggt ggg acc att ttt ggt acc tgg
leu val amh lys asp pro ala ala arg thr leu lys ala gly thr ile ser asp ser tyr
1021/341 1051/351
ccc gac aca gga ggt tac ggg arg gcc aat tgg gcc ccc ccc tca ctc cgg tgg tca tgg
pro asp thr gly gly tyr gly met ser asp ser arg arg arg ser leu arg trp ser trp
1081/361 1111/371
ttg cgg acc gtt cgt gcc gcc ggg cgg ggc ctt gcc aag ggg ccc gcc cag gcc gcc
leu leu ser val leu ala ala val gly leu gly leu ala thr ala pro ala gln ala ala
1141/381
ccc ccc gcc tgg tgg cag gcc cgt tr
pro pro ala leu ser gln asp arg

```

SEQ ID N° 50A

FEUILLE DE REMPLACEMENT (REGLÉ 26)

F. 2000-05A

177/185

1/1 31/11
 atc cgg cgg cgc ggg tct cgg cgc agg cgt ggc tgg cgg tca cgg cgg tgc ggg cgg tgc
 ile arg arg gly gly cys acg arg arg arg gly trp arg ser arg arg cys gly arg cys
 61/21 91/31
 cgc cgg gct gtc ggg cgc cgg cgg cgg cgg tgg caa tgc cgg gaa cgg cgg cga tgc caa
 arg arg ala val gly arg arg arg arg trp gln trp arg gln arg arg arg cys gln
 121/41 151/51
 cat cgt cag cgg tgg aga cgg tgg cct cgg cgg tgc cgg tgg cgg arg gct cta
 his arg gln arg trp arg arg trp pro arg arg cys arg trp arg trp arg met ala leu
 181/61 211/71
 cgg cga cgg cgg cgc cgg cgc cgc cgc cga cgg cgc act cgg cct cgg cgg cgg cgc
 arg arg arg arg gly arg arg thr arg arg thr arg arg asn arg pro arg arg arg arg
 241/81 271/91
 cgg cgg cga cgg ggg cca ggg cgg cgg cgg cgg cgg act gtc cgg tac tgg cgg cgc cgg
 arg arg arg arg gly pro gly arg arg arg pro arg thr val gly tyr trp arg arg arg
 301/101 331/111
 cgg cga cgg cgg gca cgg cgg tgg tac cgg ggg cgc act gct ggc cgg tca ggc arg cat
 arg thr arg arg ala arg arg ctp tyr arg gly pro thr ala ala arg ser gly arg his
 361/121 391/131
 cgg cgc cgc ggg tgg cgc cgg tgg gct gat cga caa cgg tgg ggc cgg cgg gaa cgg cgg
 gly arg arg gly ctp arg arg ctp ala asp arg gln arg arg gly arg arg arg arg
 421/141 451/151
 tgc cgg cgc cgt cgg cgg gct cgc cgg agt agt cgg tgg tgg cgg gaa cgc cat gct gat
 cys arg arg val arg arg gly arg arg ser arg arg cys arg arg gln arg his ala asp
 481/161 511/171
 cgg gca cgg cgg cgc cgg cgg cgc cgg cgg aga cag cag ttc cgc taa tgg cgc ggc cgg
 arg ala arg arg arg arg arg arg arg arg arg gln gln phe arg och trp arg gly arg
 541/181 571/191
 cgg cgc cgg cgg tgc cgg agg gca cct ctt cgg caa tgg cgg gtc cgg cgg cca cgg cgg
 arg arg gly arg cys arg arg ala pro leu arg gln trp arg val arg arg pro arg arg
 601/201 631/211
 agc cgt cac cgc cgg caa cae cgg tat cgg tgg cgc cgg cgg cgt cgg tgg gga cgc cag
 ser arg his gly arg gln his arg tyr arg trp arg arg arg arg trp gly arg gln
 661/221 691/231
 gct gct cgg cga cgg tgg cgc cgg cgg tgc cgt cgg gga cgc cgc cgg agc ctt ggt tgg
 ala asp arg pro arg trp arg arg arg cys arg arg gly pro arg ser leu gly trp
 721/241 751/251
 cgg tga cgg cgg ggc cgg tgg gaa cgg cgg cgc tgg cgg cca gct ata cgg caa cgg cgg
 pro oaa arg arg ala arg trp gln arg gly arg trp arg pro ala ile arg gln arg arg
 781/261 811/271
 cga cgg cgc cgc cgg cae cgc cgg aac aac gca gac ggc ggt gga cgt att ggt gac ggc
 arg arg arg pro arg his arg arg asn thr ala gly gly gly gln arg ile gly asp gly
 841/281 871/291
 ttt gtt cgg tgc acc cgg cca acc cgg cga cgc cgg cca acc cgg cta gcc cgg atc aac
 phe val arg cys thr arg pro thr arg arg his arg pro thr arg leu ala pro ile asn
 901/301 931/311
 gac gct ttc ggt ggc ggt cgg ggg cat gcc cat cgg tgc arg tgc cca tct gga cta cgt
 gln gly phe gly ala gly pro gly his gly his pro leu ser trp arg ser gly leu arg
 961/321 991/331
 tgg tgt aga aaa atc cgt cgg cgc cga ccc tta agt cgt gga caa ctt cgt ata gct acc
 trp cys arg lys ile leu pro pro gly pro leu arg leu gly gln phe leu ile ala thr
 1021/341 1051/351
 cgg aga cag gag gtt arg gga tga gca att cgc gcc ggc gct cat tca ggt ggt cat ggt
 pro thr gln gln val thr gly oaa ala ile arg ala ala ala his ser gly gly his gly
 1081/361 1111/371
 tgc tga cgg tgc tgg cgt cgg tgg cgg tgg gcc tgg cca cgg cgt cgg cca cgg cgg ccc
 cys oaa ala cys trp leu pro ser gly trp ala trp pro arg arg arg pro arg arg pro
 1141/381
 cgc cgg cct tgt cgc agg acc ggc t
 arg arg pro cys arg arg thr gly

SEQ ID N° 50B

FIGURE 50B
 FEUILLE DE REMPLACEMENT (REGLE 26)

178/185

1/1 31/11
 tcc gcc ggg ggc ggt gtc gcc gca gcc gtc gcc gcc ggt cca gcc ggt ggc gcc ggt gcc
 ser gly gly ala gly val gly ala gly val ala gly gly his gly gly ala gly gly ala
 61/21 91/31
 gcc ggg ctg tgg gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 ala gly leu trp gly ala gly gly gly gly gly gcc aat gcc gcc gcc gcc gcc gcc gcc gcc
 121/41 151/51
 atc gtc agc ggt gga gac ggt gcc ctg gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 ile val ser gly gly asp gly gly leu gly gly ala gly gly gly gly gly trp leu tyr
 181/61 211/71
 gcc
 gly asp gly gly ala gly gly his gly gly gln gly ala ile gly leu gly gly gly gly ala
 241/81 271/91
 gcc
 gly gly asp gly gly gln gly gly ala gly arg gly leu trp gly thr gly gly ala gly
 301/101 331/111
 gga gcc
 gly his gly gly gln gly gly gly gly thr gly gly pro pro leu pro gly gln ala gly met
 361/121 391/131
 gcc
 gly ala ala gly gly ala gly gly leu ile gly aat gly gly ala gly gly asp gly gly
 421/141 451/151
 gcc
 val gly ala ser gly gly val ala gly val gly gly ala gly gly aat ala met leu ile
 481/161 511/171
 gcc
 gly his gly gly ala gly gly ala gly gly asp ser ser phe ala aat gly ala ala gly
 541/181 571/191
 gcc
 gly ala gly gly ala gly gly his leu phe gly aat gcc gcc gcc gcc gcc gcc gcc gcc gcc
 601/201 631/211
 gcc
 ala val thr ala gly aat thr gly ile gly gly ala gly val gly gly asp ala arg
 661/221 691/231
 ctg gcc
 leu ile gly his gly gly ala gly gly ala gly gly asp arg ala gly ala leu val gly
 721/241 751/251
 cgt gcc
 arg asp gly gly pro gly gly aat gly gly ala gly gly gly gln leu tyr gly aat gly gly
 781/261 811/271
 gcc
 asp gly ala pro gly thr gly gly thr leu gln ala ala val ser gly leu val thr ala
 841/281 871/291
 ttg ttc ggt gca ccc gcc cca ccc gcc gcc aat gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 leu phe gly ala pro gly gln pro gly asp thr gly gln pro gly aat pro arg ser thr
 901/301 931/311
 agg gtt tgg tgg ccg gtc ccg gcc arg gcc att gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 arg val ser val pro val arg gly met ala ile arg cca ala gly asp leu asp tyr val
 961/321 991/331
 ggt gta gaa aaa tcc tgc ccg ccg gcc cct taa gcc tgg gcc aat ttc tga tag tta ccc
 gly val gln lys ser cys arg pro asp pro ccc gly trp asp aat phe cca aat pro
 1021/341 1051/351
 cga gcc agg agt tta cgg gat gag caa ttc gcc ccg ccg gcc att cag ctg gtc atg gtt
 arg his arg arg leu arg asp glu gln phe ala pro pro leu thr gln val val met val
 1081/361 1111/371
 gcc gcc ggt ggt gcc tcc ctt cgg gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 ala gln arg ala gly cys arg arg ala gly pro gly his gly ala gly pro gly gly pro
 1141/381
 gcc gcc ttt gtc gaa ccc gtt
 ala gly leu val ala gly pro val

SEQ ID N° 50C

FIGURE 50C
 FEUILLE DE REMPLACEMENT (REGLE 26)

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Séquence codante Rv0125 prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq50A:

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1/1                               31/11
atg agc aat tgg cgc cgc cgc tca ctg agg tgg tca tgg ttg ctg agc gtg ctg gct gcc
Met ser asn ser arg arg arg ser leu arg trp ser trp leu leu ser val leu ala ala
61/21                               91/31
gtc ggg ctg ggc ctg gcc acg gcg cgc gcc cag ggc gcc cgc cgc gcc ttg tgg cag gac
val gly leu gly leu ala thr ala pro ala gln ala ala pro pro ala leu ser gln asp
121/41                               151/51
cgg ttc gcc gac ttc ccc gag cgc ccc ctg gac cgc tcc gcc atg gtc gcc cca gtg ggg
arg phe ala asp phe pro ala leu pro leu asp pro ser ala met val ala gln val gly
181/61                               211/71
cca cag gtg gtc aac atc aac acc aaa ctg ggc tac aac aac gcc gtg ggc gcc ggc acc
pro gln val val asn ile asn thr lys leu gln gly tyr asn asn ala val gly ala gly thr
241/81                               271/81
ggc atc gtc atc gat ccc aac ggt gtc gtg ctg acc aac aac cag gtg atc ggc gcc gcc
gly ile val ile asp pro asn gly val val leu thr asn asn his val ile ala gly ala
301/101                               331/111
acc gac atc aat gag ttc agc gtc ggc tcc gcc cca acc tac ggc gtc gat gtg gtc ggc
thr asp ile asn ala phe ser val gly ser gly gln thr tyr gly val asp val val gly
361/121                               391/131
tat gac cgc acc cag gat gtc gcg gtg ctg cag ctg cgc ggt gcc ggt gcc ctg cgc tgg
tyr asp ggc thr gln asp met ala val leu gln leu arg gly ala gly gly leu pro ser
421/141                               451/151
cgc ggc atc ggt ggc ggc gtc ggc gtt ggt gag ccc gtc gtc ggc agc gcc aac agt ggt
ala ala ile gly gly gly val ala val gly glu pro val val ala met gly asn ser gly
481/161                               511/171
ggg cag ggc gga acg ccc cgt ggc gtc cct gcc agg gtg gtc ggc ctg gcc cca acc gtg
gly gln gly gly thr pro arg ala val pro gly arg val val ala leu gly gln thr val
541/181                               571/191
cag ggc tgg gat tgg cgc acc ggt gcc gaa gag aca ttg acc ggc ttg atc cag ttc gat
gln ala ser asp ser leu thr gly ala glu glu thr leu asn gly leu ile gln phe asp
601/201                               631/211
gcc ggc atc cag ccc ggt gat tgc ggc ggc ccc gtc gtc aac gcc cta gga cag gtg gtc
ala ala ile gln pro gly asp ser gly gly gcc val val asn gly leu gly gln val val
661/221                               691/231
ggc atg aac acg gcc ggc tcc gat aac ttc cag ctg tcc cag ggt ggc cag gga ttc gcc
gly met asn thr ala ala ser asp asn phe gln leu ser gln gly gly gln gly phe ala
721/241                               751/251
att cag atc ggc cag gag atg ggc atc ggc gcc cag atc cga tgg ggt ggc ggc tca ccc
ile pro ile gly gln ala met ala ile ala gly gln ile arg ser gly gly gly ser pro
781/261                               811/271
acc gtt cat atc ggc cct acc gcc ttc ctg ggc ttg ggt gtt gtc gac aac aac gcc aac
thr val his ile gly pro thr ala phe leu gly leu gly val val asp asn asn gly asn
841/281                               871/291
ggc gca cga gtc cca cgc gtg gtc ggc agc gct cgc ggc gca ggt ctg ggc atc tcc acc
gly ala arg val gln arg val val gly ser ala pro ala ala ser leu gly ile ser thr
901/301                               931/311
ggc gac gtg atc acc ggc gtc gcc ggc gct cgc atc aac tgg gcc acc cag atc ggc gac
gly asp val ile thr ala val asp gly ala pro ile asn ser ala thr ala met ala asp
961/321                               991/331
cgc ctt aac ggc cat cat ccc ggt gcc gtc atc tgg gtg acc tgg cca acc aag tgg ggc
ala leu asn gly his his pro gly asp val ile ser val thr trp gln thr lys ser gly
1021/341                               1051/351
ggc acg cgt acc ggc aac gtg aca ttg gcc gag gga ccc cgc gcc tga
gly thr arg thr gly asn val thr leu ala glu gly pro pro ala opa

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SEQ ID N° 50D

FEUILLE DE REMPLACEMENT (REGLE 26)

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ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv0125:

1/1 31/11
 tag aaa aat cct gcc gcc cgg acc ctt aag gct ggg aca att tct gat agc tac ccc gac
 AMB lys asn pro ala ala arg thr leu lys ala gly thr ile ser asp ser tyr pro asp
 61/21 91/31
 aca gga ggt tac ggg atg agc aet tcg cgc cgc cgc tca ctc agc tgg tca tgg ttg ctg
 thr gly gly tyr gly met ser asn ser arg arg arg ser leu arg trp ser trp leu leu
 121/41 151/51
 agc gtc ctg gct gcc gtc ggg ctg gcc ctg gcc acg cgc cgc gcc gcc gcc gcc gcc
 ser val leu ala ala val gly leu gly leu ala thr ala pro ala gln ala ala pro pro
 181/61 211/71
 gcc ttg tcg cag gac cgg ttc gcc gac ttc ccc gcc ctg ccc ctc gac ccc tcc gcy atg
 ala leu ser gln arg arg phe ala asp phe pro ala leu pro leu asp pro ser ala met
 242/81 271/91
 gtc gcc cca gtc ggg cca cag gtc gtc aac atc aac acc aaa ctg gcc tac aac aac gcc
 val ala gln val gly pro gln val val asn ile asn thr lys leu gly tyr asn asn ala
 301/101 331/111
 gtg gcc gcc ggg acc gcc atc gtc atc gat ccc aac ggt gtc gtc gtc gcc aac aac ccc
 val gly ala val gly thr gly ile val ile asp pro asn gly val val leu thr asn asn his
 361/121 391/131
 gtc atc cgc gcc gcc gcc acc gcc acc aat ggc ttc agc gtc gcc gcc gcc gcc gcc gcc
 val ile ala gly ala thr asp ile asn ala phe ser val gly ser gly gln thr tyr gly
 421/141 451/151
 gtc gat gtc gtc ggg tat gac cgc acc cag gat gtc gcc gtc ctg cag ctg cgc ggt gcc
 val asp val val gly tyr asp arg thr gln asp val ala val leu gln leu arg gly ala
 481/161 511/171
 ggt gcc ctg cgc tcg gcc gcc atc ggt gcc gcc gtc ggt ggt gcc gcc gcc gcc gcc gcc
 gly gly leu pro ser ala ala ile gly gly gly val ala val gly gln pro val val ala
 541/181 571/191
 atg gcc aac agc ggt ggg cag gcc gaa acc ccc cgt gcc gtc cct gcc agc gtc gtc gcc
 met gly asn ser gly gln gln gly thr pro arg ala val pro gly arg val val ala
 601/201 631/211
 ctc gcc caa acc gtc cag gcc tcg gat tgg ctg acc ggt gcc gaa gaa caa ttg aac ggg
 leu gly gln thr val gln ala ser asp ser leu thr gly ala gln gln thr leu asn gly
 661/221 691/231
 ttg atc cag ttc gat gcc gcc atc cag ccc ggt gat tcg gcc ggg ccc gtc gtc aac gcc
 leu ile gln phe asp ala ala ile gln pro gly asp ser gly gly pro val val asn gly
 721/241 751/251
 cta gga cag gtc gtc ggt atg aac arg gcc gcc tcc gat aac ttc cag ctg tcc cag ggt
 leu gly gln val val gly met asn thr ala ala ser asp asn phe gln leu ser gln gly
 781/261 811/271
 ggg cag gga ttc gcc att ccc atc ggg cag gcc atg gcc atc gcc gcc cag atc cga tgg
 gly gln gly phe ala ile pro ile gly gln ala met ala ile ala gly gln ile arg ser
 841/281 871/291
 ggt ggg ggg tca ccc acc gtt cat atc ggg cct acc gcc ttc ccc gcc ttg ggt gtt gtc
 gly gly gly ser pro thr val his ala gly pro thr ala phe leu gly leu gly val val
 901/301 931/311
 gac aac aac gcc aac gcc gca cga gtc caa cgc gtc gtc ggg gcc ggt tgg gcc gca agt
 asp asn asn asn gln asn gly ala arg val gln arg val val gly ser ala pro ala ala ser
 961/321 991/331
 ctc gcc atc tcc acc gcc gac tgc atc acc gcc gtc gcc gcc gct ctg atc aac tgg gcc
 leu gly ile ser thr gly asp val ile thr ala val asp gly ala pro ile asn ser ala
 1021/341 1051/351
 acc gcc atg gcc gcc gcc cct aac ggg cat cat ccc ggt gac gtc atc tgg gly acc tgg
 thr ala met ala asp ala leu asn gly his his pro gly asp val ile ser val thr trp
 1081/361 1111/371
 cca acc aag tcg gcc gcc agc cgt aca ggg aac gtc acc tgg gcc ggg gga ccc cag gcc
 gln thr lys ser gly gly thr arg thr gly asn val thr leu ala glu gly pro gcc ala
 1141/381
 tga
 oaa

SEQ ID N° 50F

FEUILLE DE REMPLACEMENT (REGLE 26)

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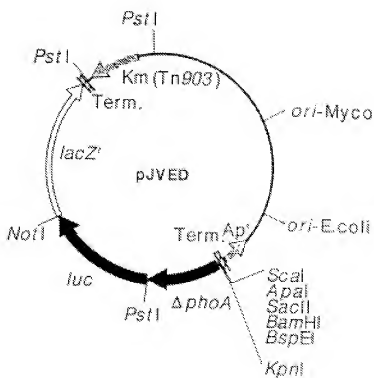


FIGURE 51A

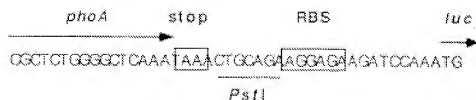
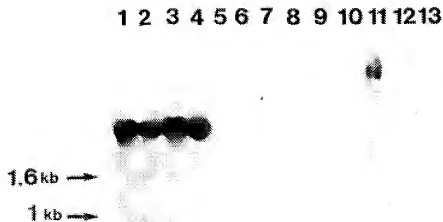


FIGURE 51B

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Expériences d'hybridation moléculaire d'une sonde spécifique
du BP428 sur l'ADN génomique de différentes espèces de
mycobactéries



1: *M. tuberculosis* 2: *M. bovis* 3: BCG 4: *M. africanum* 5: cancelled 6: *M. fortuitum* 7: *M. simiae* 8: *M. avium* 9: *M. abscessus* 10: *M. flavescens* 11: *M. goodii* 12: *M. marinum* 13: *M. kansasii*

FIGURE 52
FEUILLE DE REMPLACEMENT (REGLÉ 26)

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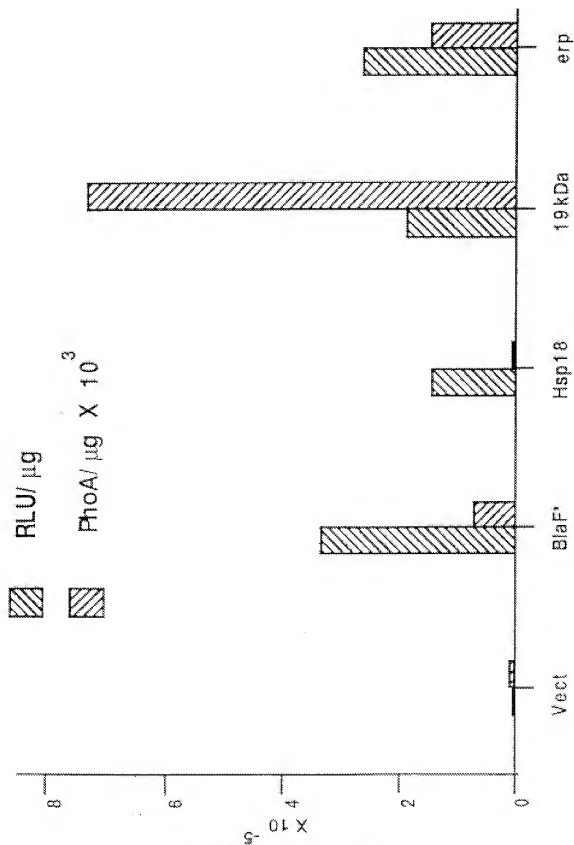


FIGURE 53

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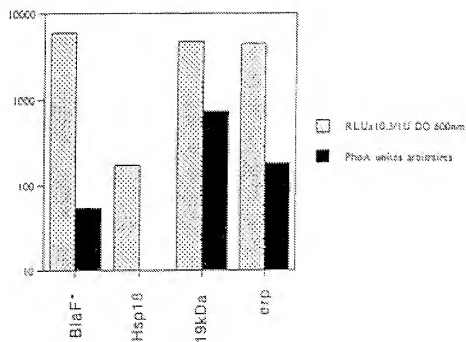
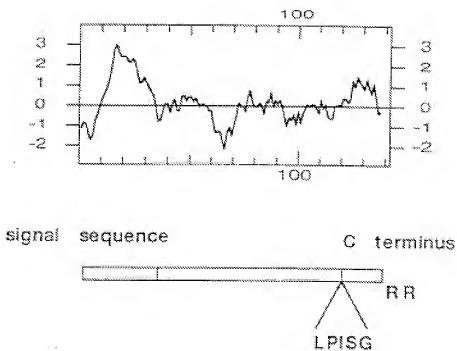


FIGURE 54



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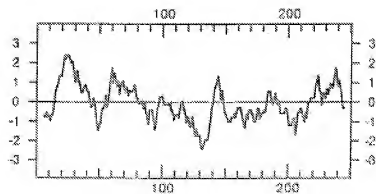


FIGURE 56



FIGURE 57A



FIGURE 57B